Development and evaluation of fitting business models for GameBus using the BASE/X framework

by

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Abstract

This master thesis describes the result of a six-month graduation project within a team working on GameBus, a novel application created within a multi-company, multi-nationality collaboration. This report describes the exploration of different business models to be used for the commercialization of GameBus using a framework called BASE/X. This framework, forged through projects at the TU/e, focuses on service-oriented businesses.

The corresponding research question states:
“What are relevant BASE/X-supported business models for GameBus targeted at the Italian and Dutch markets?”

To answer this question first a literature study about the competitors and potential partners of GameBus was performed along with a study into BASE/X and business models. This resulted in the creation of five business models:

1. Volume license subscription for corporate customers (B2B)
2. Freemium for individual users (B2C)
3. Pay per ad for corporations (B2B)
4. A reverse-utility commitment model (B2C)
5. Subscription for data analytics for corporations (B2B)

Following this step, interviews were conducted to investigate the strengths and weaknesses of different business models. All business models have potential, however each have their own weaknesses and threats that must be kept under control.

Two quantitative models were built as a final step. Using a modeling tool Vensim a model was created to check the influence of different variables on the freemium business model. The second model was created using Excel which portrays the effects different options have on the costs of subscribing. It gives attractive options to upgrade to higher plans. These models were presented to relevant stakeholders and feedback was gathered to improve the BMs.

Finally a global strategy was presented with emphasis on creating a large user base using the 2nd business model (B2C) and a stable income using the 1st model (B2B). The price of GameBus is set to €10 per user. A total of 2000 consumers paying for 5 users each or 27 companies buying an average of 500 licenses are required to cover the estimated costs of €100.000 due to manual labor and infrastructure costs.

“A business that makes nothing but money is a poor business.”

Henry Ford
Management summary

For a product to be a success it is not only necessary that it creates value for your clients. It is also important that a revenue is generated so the product can continue to exist. Also when attracting investors or selling the product it is key to have a clear goal in mind: Who do I target this product, what value will I deliver them with this and how do they compensate me for my efforts. This thesis explains in a set of chapters what GameBus is and what makes it unique, evaluates the use of the BASE/X framework, and comes up with a set of potential business models to be used as a way commercialize GameBus. The research question addressed by this thesis is the following:

“What are relevant BASE/X-supported business models for GameBus targeted at the Italian and Dutch markets”

GameBus

GameBus is an app that rewards groups of people for healthy activities on a social, cognitive and physical level in a personalized gaming experience using challenges. Users of different apps are currently disconnected from their friends and family, when grandmother is not playing anything, she can get socially isolated. GameBus changes the social interaction between these users.

This is done by letting people play different games they enjoy personally in such a fashion that they are part of an integrated social interaction. Elderly might be willing to play their favorite puzzle game (e.g. Griddlers using iGridd or even offline activities) while competing in challenges with their younger peers that enjoy physical activities (e.g. running using Runkeeper), this old and new situation is visualized in Figure 1.

![Figure 1: Social interaction AS IS and TO BE](image)

An app such as GameBus is unique and is not yet available on the market. However there are some competitors or potential partners that are focusing on some aspects of GameBus. A brief benchmark is shown in Table 1.
One of the objectives was to analyze the BASE/X framework, with special emphasis on the Business Model Radars. BASE/X is a framework which puts emphasis on agility in service-dominant markets, the kind of market GameBus will be active in. BASE/X can help with the design of BMs by having a service dominant starting point, creating BASE/X Business Model Radars. Unlike more traditional approaches (like the Business Model Canvas), services and business networks are basic, essential elements in the design.

Overall the framework was received well. However there were significant differences between different radars.

Some possible improvements were found during the interviews, in short they are the following:

- The lines are made thicker at the top and dotted at the bottom.
- The name of the stakeholder is placed above the value proposition to identify for whom the value is meant.
- Open spaces are made equal to the number of stakeholders.
- The terms are placed as horizontal as possible, to improve reading from a computer.

### Table 1: GameBus Benchmark

<table>
<thead>
<tr>
<th>Name</th>
<th>Health focus</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cognitive</td>
<td>Physical</td>
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<tr>
<td>GameBus</td>
<td>X</td>
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</tr>
<tr>
<td>DisciplineGames</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
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<td>X</td>
<td>C</td>
</tr>
<tr>
<td>Fitocracy</td>
<td>X</td>
<td>C, I</td>
</tr>
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<td>C</td>
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<tr>
<td>Google Fit</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Griddlers</td>
<td>X</td>
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</tr>
<tr>
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<td>C</td>
</tr>
<tr>
<td>Strava</td>
<td>X</td>
<td>C</td>
</tr>
<tr>
<td>TicTrac (B2B)</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

*Social categories: E (Emotional) T (Tangible) I (Informational) C (Companionship).
**Gamification: Leaderboards, rank, digital rewards, real world prizes, challenges, social pressure.

### Table 2: Average BASE/X ratings

<table>
<thead>
<tr>
<th></th>
<th>Corporate</th>
<th>Freemium</th>
<th>Data</th>
<th>Commitment</th>
<th>Upgrading</th>
<th>Weighted Average</th>
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<td>Clear</td>
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<tr>
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</thead>
</table>

BASE/X

One of the objectives was to analyze the BASE/X framework, with special emphasis on the Business Model Radars. BASE/X is a framework which puts emphasis on agility in service-dominant markets, the kind of market GameBus will be active in. BASE/X can help with the design of BMs by having a service dominant starting point, creating BASE/X Business Model Radars. Unlike more traditional approaches (like the Business Model Canvas), services and business networks are basic, essential elements in the design.

Overall the framework was received well. However there were significant differences between different radars.
Business Models
Using all input a total of 5 business models were created, three focused on the B2B market and two on B2C market. The order of placement is roughly the order in which GameBus should be rolled out. The main focus lies on reaching the large market potential of the B2C market using freemium and getting a more steady income from companies in the B2B market.

1a. Consumer market (B2C)
Building a large user base is very important for GameBus, all consumers with a smart phone or tablet are possible users. Specific attention to upgrade to premium must be paid to three types of groups: young adults, with emphasis on the new technology; adults, with emphasis on the possibility to influence their entire family and; middle-aged (wo)men, with emphasis on the health tracking aspects of GameBus. In Italy marketing should consider focusing more on the team bonding aspects of GameBus. The revenue model should be freemium with three options: free, upgrade specific parts of the app & premium and a free trial period the first month. In the beginning there might not be a premium version ready, therefore losses are expected in this phase.

1b. Corporate customer (B2B)
The corporate customer model is aimed at large companies. In this business model the main focus lies on selling a volume license of premium memberships to a company which they can distribute to their employees. Before entering this market the app should be mature enough to be offered. This can be achieved with help from the consumer market, which is discussed next, and by doing pilot tests at companies such as ZuidZorg. When the premium features are not much different than the free features, basic support must be provided to help with creating challenges and personal branding. This support must satisfy the company but should be focused on letting the companies do most themselves, as this way co-creation is exploited and support costs will decline over time. Companies are open to buying the product for their employees. However paying for their clients seems more troublesome, since they need to see the benefit of paying for those clients instead of the clients buying it for themselves. Brand recognition and service towards their clients are the motivations for them. Health care companies could be convinced by saving of operational costs as well. This might be more the case when the app is more popular and there is demand for this or when it is proven that using GameBus reduces costs for health care companies or insurers. In Italy companies might be convinced by adding it to their team-building programs due to their 'family'-culture, where in The Netherlands the health of the employees might be more important.

2a. Sponsorship model (B2B)
Sponsors would want to advertise in GameBus. These sponsors can advertise through GameBus by making challenges and awarding players to compete in these challenges. The main target market to approach are companies with a healthy appearance who want to express themselves that way to the user base of GameBus. But it can also be targeted at event organizers like introduction weeks at universities or sporting events. The challenges are paid per ad, this can be done per ad or billed monthly on utility base. With this kind of advertisement in place, more free users will be eager to upgrade to premium.
2b. Data analytics model (B2B)

Synergetics can function as a big data provider to answer research questions for different types of companies: first the larger companies who span across several regions or countries might be interested in the differences between these regions. This way they can target their marketing efforts more precisely. Secondly some companies might want to have more extensive knowledge about their clients within their own region. But also knowledge institutes may use the data. Since knowledge institutes have a wide range of questions, some might be answered using data from GameBus. The way this data analytics is offered is through Synergetics at a subscription offer. Different levels of subscription are possible that can differ in terms of amount of data, complexity of data analytics and amount of support from Synergetics.

2c. Commitment model (B2C)

The commitment model is focused around an extra feature that has to be implemented in GameBus. The target market would be more fanatic sportsmen such as cross-fitters in The Netherlands or mountain climbers in Italy. This model lets users pledge money if they do not achieve their goals, however when they do they can earn money. GameBus will take a portion of the prize pool as its function of broker. The portion GameBus will take will vary depending on the percentage of users failing their goals. If everyone achieves their goal this percentage will be 0.

Costs and revenue

To make contact with companies an account manager is required (0.5 FTE). Besides this an engineer is required to maintain up-time and fix bugs (0.25 FTE). One of these two should also be able to provide support to the companies with creating challenges and personal branding (0.25). In total this will be one FTE of roughly €80,000 - €90,000. Together with the infrastructure costs, the total cost is expected of €90,000 - €100,000 annually. We assume marketing costs are neglectable in the long run due to WOM. In the beginning some advertisement is necessary, however the costs of infrastructure will be lower to compensate this. Also, EIT Digital helps with external exposure at the start.

We set a base price for GameBus at €10 for individuals. Companies are expected to buy between 250 and 1000 licenses, which given them a volume discount of 25%. Therefore companies will pay on average €7,50 per license.

The amount of users required to equal a revenue of €100,000 per year equals 10,000 premium users. We estimate that on average a family pack of 5 users is bought, and therefore 2000 paying users are required. When looking at companies, 13,334 licenses are required. When an average firm buys 500 licenses at €3750, this will total to 27 companies that have to buy GameBus for their employees (or clients).
Graph 1 shows the number of users and/or companies necessary to gain €100,000 to cover the expenses. It also shows that the higher percentage of revenue comes via corporate customers, the higher percentage of premium users are active. However the number of premium users from the B2C market is just a small percentage of the total active users in this market, due to the free option of freemium. If premium is purchased by 10% of the active user base, this will lead to a requirement of 13,500 – 100,000 total users (free and premium), ranging from fully populated by company users to fully B2C (freemium) populated.
Preface

At the very beginning of my master thesis project I was given some tough choices. Should I choose for an interesting case at ChipSoft, meaning that I should leave everything in Eindhoven behind and start looking for a place to live in Amsterdam? Or maybe stay in Eindhoven to work at ASML, a company with an international image, but with a case that is not really in line with my mentor's focus nor my own. Or join up with the GameBus team Pieter can't stop talking about. As the title of my study suggests: I chose the latter.

A great choice, might I add. My team at GameBus, and other staff at the capacity group Information Systems, made it worth my while. Although sometimes when my student colleagues, who were graduating at companies like TomTom or Vanderlande, bragged about their monthly pay check at the weekly student drinks I felt a little pain. Also getting a preview of the working life with the guys from Pasta Amanti were cherishable moments which I hope to continue even after all of our graduations.

Although this is a project performed solo, it never felt that way. Visiting Fabrizio and his crew at ZuidZorg every Tuesday or Wednesday and my collaboration with Carolina on Thursdays were alternated with working either at home, on campus or performing interviews. Of course also a thank you to all these stakeholders I interviewed or in other ways stole time from, by giving me insights in their view on GameBus and its business models.

I would really like to thank my first supervisor, the nutty professor Pieter Van Gorp, especially. He made me part of the team that was responsible for his brainchild GameBus. He guided me through the project, helped me when I was stuck, gave me contacts to reach out to when I couldn't get through and above all pushed me to do better. He always did this with such a contagious enthusiasm you couldn't stop getting enthusiastic about GameBus too. Of course I would also like to thank my second supervisor Oktay Türetken.

Also all my friends and family who supported me not only during my thesis project but my entire educational path leading up to this moment: thank you all.

Last but not least I want to thank my girlfriend Eva for distracting me on the right, and sometimes not so right, moments.
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1. Introduction

Every day new businesses are founded, new software is released and new apps are launched in different app stores. Hundreds of thousands of mobile apps are being developed annually. However, lots of these cannot seem to make a profit. Gartner predicted that through 2018 less than 0.01% of consumer mobile apps will be considered a financial success by their developers (Dulaney, 2013). Even popular new services such as Spotify and Strava are struggling with this (Horvath, 2012). A report published by Generator Research called the current business model (BM) for streaming music inherently unprofitable (Sheehy, 2013). This is confirmed by a research of PrivCo which states that Spotify has only lost money since its founding in 2006 (as cited in Brustein, 2014), even though they have roughly 10 million paying customers, 20% of their active users (Cookson & Bradshaw, 2014).

Key Plantes even states that BMs have become the new basis of competition, replacing product features and benefits as the playing field on which companies emerge as dominant or laggards (Plantes, 2015).

The question every new business should ask themselves is therefore: How can I make a profit? Or in other words: What kind of BM is suitable for my service?

1.1 Context

One of those new services is GameBus, which is the focus during this thesis. GameBus in one sentence is an app that rewards groups of people for healthy activities on a social, cognitive and physical level in a personalized gaming experience using challenges. After a little more background on the drivers behind the development of GameBus, the app will be explained in more detail.

Background

Current demographic trends show that the European population is aging, families have more and more care responsibilities towards their aging or dependent family members (Ambient Assisted Living, 2014). Still the predictions are that the health expenditure in Europe will increase not only absolute, but also in matters of %GDP (European Commission, 2012). However due to the busy lives of the current adults these care responsibilities seem impossible. In this same time span however the number of devices on the Internet is growing significantly. This number exceeded the number of people on the Internet in 2008, and is estimated to reach 50 billion in 2020 (Swan, 2012).

Due to these development the European Institute of Innovation & Technology has written out a call to address these problems. GameBus, an idea of the Eindhoven University of Technology (TU/e) and other institutes, was chosen as a viable solution to these problems. However to make this app a success several work packages have been designed. In this research work package 3 will be addressed. This work package covers the development and evaluation of sustainable BMs as well as a detailed BM for GameBus.

GameBus

Users of different apps are currently disconnected from their friends and family, as shown in Figure 2. When grandmother is not playing anything, she can get socially isolated.
GameBus provides a novel app to turn currently perceived duties regarding cognitive, physical and social activities into an enjoyable gaming experience (Van Gorp, 2015a). This is done by letting people play different games they enjoy personally in such a fashion that they are part of an integrated social interaction. Elderly might be willing to play their favorite puzzle game (e.g. Griddlers using iGridd or even offline activities) while competing in challenges with their younger peers that enjoy physical activities (e.g. running using Runkeeper), this new situation is visualized in Figure 3.

Figure 2: Players isolated per application

Figure 3: GameBus connects people
Players are free to use the games they are comfortable and familiar with or explore new apps supported by GameBus. GameBus users stimulate themselves and team members to reach certain goals set in challenges, either by themselves or by a third party, to earn rewards. These activities favor their health directly. A basic set of challenges are set by GameBus, however the goal is that all stakeholders interacting with GameBus set up their own challenges, suiting their goals the best, making use of the co-creation possibilities of GameBus, relieving the GameBus team of creating challenges.

Besides direct healthy advantages, the game dynamics also counters social isolation and unconsciously vulnerable elderly by the provided interaction between team members. These team members will also be able to monitor possible cognitive decline.

GameBus uses an open API (Application programming interface), this means that websites and applications are able to interact with each other. This way, if a player completes a certain task within an app (e.g. completing a puzzle, finishing a run) the data of this activity can be exchanged between the app and GameBus. GameBus can use this data to award players points in their team challenges. A visual representation is shown in Figure 4.

**CHALLENGE**

![Figure 4: Challenges in GameBus](image)

GameBus will rely on this point on a bus architecture: these additional components (game software, game rules and wearable/external sensors) can be added as game suppliers, without changing the core infrastructure. However, for GameBus to connect with an app the game suppliers need open API as well. Ideally GameBus will be popular enough so game suppliers connect their games out of own movement. This way all kind of apps will be compatible to GameBus and everyone can play his or her favorite games.
GameBus users will also run in the background of player's smart phone (or tablet) a novel service called Cameo that monitors physical social interactions based on device-to-device communications. This will further enrich their personal data sets and it will enable the reasoning on correspondences (if any) between virtual and social lives. GameBus will generate rich, integrated data (related to cognitive, physical, and social activities) which can be exploited commercially or used for scientific progress. The underlying infrastructure will however have the platform-level guarantee that by default the integrated personal data does not flow to the game suppliers or to external providers of health analytics services. Only with consent of the user their data can be shared with external parties. To get a better picture of what the GameBus app offers, please take a look at the screen-shots provided in Appendix G.

Overall four key values are pursued by GameBus:

1. Unobtrusiveness
   - GameBus should track activities without players have to manually indicate having done these activities.

2. Everyone can win
   - With the right motivation, everyone should be able to win the challenge. However builders of challenges are responsible for this possibility.

3. Play what you like
   - It doesn't matter whether you run with Runkeeper, Strava or Endomondo or you play brain games of Lumosity or CogniFit, as long as you perform the right activities indicated in the challenges your activities are tracked.

4. Wear what you want
   - Some people have a Fitbit, where others are wearing a smart watch or a very specific wearable measuring glucose levels. Most individuals just have a smart phone with maybe a pedometer. All wearables that track activities should be connectable to GameBus.

1.2 Problem Statement

Although a basic BM was established by the initiators of the project, this has not been worked out yet. Furthermore the transition to a more service oriented marketplace is taking place. GameBus is, other than traditional goods manufacturers, not a product from the assembly line but a service that can be aimed at several different customers. Therefore the traditional goods-based BMs may not be suitable. BASE/X is a model that can be used to create several service-dominant BMs. However this is a new framework and needs to be evaluated.

Relevance

Besides Plantes (2015) also Barrow, Barrow and Brown (2008) and others (Hormozi, Sutton, McMinn, & Lucio, 2002) indicate the importance of a BM. Some of the advantages are internally, such as the following:

- Making mistakes on paper instead in real life, by gathering certain information before the actual roll-out.
- It will give more insight on the amount of money involved, required and how you earn investments back.
- It explains how your product will operate on the marketplace.
These latter two are also very important to communicate to external stakeholders and investors. With the BM these actors will understand what the business is about, what its opportunities are and how it is supposed to earn money. Also for receiving grants and subsidy it is often necessary to give such feedback at certain points in the project.

1.3 Research objectives

In this paragraph the main research question will be stated, as well as its corresponding sub-questions. Answering these questions will lead to an answer to the problem posted in the previous paragraph.

The main research question for the master thesis is:

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“What are relevant BASE/X-supported business models for GameBus targeted at the Italian and Dutch markets?”
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The result of answering this question will also lead to the development of an actual BM for GameBus. The development of this plan goes hand in hand with the evaluation of the BASE/X framework.

**Sub questions**

In order to come to an answer to the main research question, several sub questions can be formulated.

1) How is GameBus unique? (SQ1)
2) Which challenges are encountered when applying BASE/X Business Model Radars for GameBus? (SQ2)
3) How do the GameBus stakeholders rate the BASE/X Business Model Radar related deliverables? (SQ3)
4) What are the strengths and weaknesses of the BASE/X BMs for GameBus? (SQ4)
2. Theory

On itself, the main research question, and consequently the sub questions, might raise some questions on their own: What is 'BASE/X', what precisely does someone mean with 'business models' and what is GameBus? In the introduction chapter GameBus has been explained. In this chapter the underlying theory of both BASE/X and BMs will be explained. Also to determine an answer to SQ4 SWOT analysis is used to identify the strengths, weaknesses, opportunities and threats each BM faces, therefore a small theoretical background of this technique is given.

2.1 BASE/X

BASE/X is a framework which puts emphasis on agility in service-dominant markets. It has been developed in the CoProFind project, a strategic collaboration between Eindhoven University of Technology and De Lage Landen International B.V. BASE/X can help with the design of BMs by having a service dominant starting point. Unlike more traditional approaches (like the Business Model Canvas), services and business networks are basic, essential elements in the design. This results in a service dominant BM radar, shown in Figure 5. At the center the solution the business has to offer is placed: the value co-creation proposition. The second inner circle represents by what co-creation interactions this solution is achieved. This is done by co-creation activities from the actors. Finally all actions have costs and/or yield benefits. Also a distinction can be made between different kinds of actors: the focal company, customer(s), core and enriching partners. At this project we will work with a more workable version seen in Figure 29. The costs and benefits are combined and the colors are removed for more convenient mapping.

In this thesis SQ2 and SQ3 are formulated to give better insights in this framework and give recommendations to improve the model.
2.2 Business Models

What defines a BM? According to Joan Magretta (2002) “a good business model answers Peter Drucker’s (1994) age-old questions: Who is the customer? And what does the customer value? It also answers the fundamental questions every manager must ask: How do we make money in this business?” So we can identify three aspects that should be investigated: the target customer, the value GameBus delivers to these customers and how does this earn money for GameBus to keep it in existence. In the following paragraphs we will first discuss the target customer and its value (2.2.1), after this different revenue models are explained (2.2.2).

2.2.1 Target customer & value

The first distinction that can be made about our target customers is their geographic location. As stated in the research question both the Dutch and Italian market will primarily be targeted, with Europe following if successful. The latter is however outside my scope.

Figure 5: Service-dominant BM radar (Lüftenegger, 2014)
**Dutch market**

Health care is not only an important factor in Europe, but also to The Netherlands. In The Netherlands the government promises payable care for every inhabitant. And The Dutch are doing well at it: The Netherlands has been number one on the Euro Health Consumer Index for years and is among the top OECD (The Organization for Economic Co-operation and Development) countries when it comes to waiting lists, patient rights and scope and availability of services (van Rooijen, Goedvolk, & Houwert, 2013). The Netherlands is the only country which has consistently been among the top three in the total ranking of any European Index the Health Consumer Powerhouse (HCP) has published since 2005 (Björnberg, 2015).

However, the costs are soaring so rapidly that if nothing is done to curb them by 2040 roughly one quarter of the GDP and one quarter of the working population is utilized to ensure provision of curative health care ('cure') and long-term health care ('care') (Rooijen et al., 2013).

**Italian market**

In Italy regionally there are many differences in quality of health-care and overall Italy scores average within Europe. This is partly due to the fact that regional governments, through the regional health departments, are responsible for ensuring the delivery of a benefits package through a network of population-based health management organizations and public and private accredited hospitals (Scalzo et al., 2009). Most of these organizations have 3 to 5-year contracts, therefore making them very reluctant to new health care possibilities (Salvadori, 2011). This is also due to the bureaucracy which is a problem in all of Southern Europe, as well as in Italy (Galanti, 2011), and therefore making changes or innovating troublesome. Italian culture revolves a lot around family and the local community, this has been like this for centuries (Sarti, 2002) and is still the case for Italy today (Bedani & Haddock, 2000).

Also healthy activities are not really stimulated or unhealthy prevented in Italy, seeing that between 1990 and 2000 Italians have started smoking significantly more and are ranked among the top Europeans smoking countries (Steptoe, 2002). Steptoe also found that physical exercise grew from one of the highest percentages to one of the lowest between the same time frame and fruit intake also dropped significantly with about 15% (2002).

Also there is a difference between the South of Italy and the rest of the nation, where the South is seen as different from and inferior to the rest of the country (Moe, 2006). Economically the South is inferior to the North of Italy (Mignone, 2008), this is also supported by Eurostat's data where the South is below 50% of the EU27 average whereas the North is at 75-125% or even higher (see Appendix B), which is more comparable to The Netherlands.

A second distinction can be made based on the type of customer: businesses (B2B) or individual customers (B2C).

**B2B**

Business to business is an interesting market for GameBus since companies are encouraged to stimulate healthy activities. Three important businesses can be identified:
1. Health care organizations

The main goal of Health care organizations is to ensure the health of their clients. GameBus can be used to help these people get better physical, cognitive and social health. Besides that it takes less FTE to take care of these people since they manage some parts of their well-being by themselves and with their friends and families. In The Netherlands the government together with the Nederlandse Zorgautoriteit (NZa) stimulates the innovation of these companies (Nederlandse Zorgautoriteit, 2010), as is evident looking at the R&D spending of The Netherlands among all OECD countries (OECD, 2013). Therefore these companies often have an innovation budget available whereas this is not the case in Italy (as can be seen in Appendix C).

2. Companies with a large amount of employees

Large companies want to ensure the health and well-being of their employees, this is also stimulated from the government (Krom, 2012). Also companies often have a budget for team building. Team building is a process of diagnosing team dynamics and instituting plans and processes to improve team performance (Dyer, 2015). Since GameBus supports teams this could be used as a tool.

3. Insurers

Large companies in The Netherlands often talk with insurers about how to maintain good health among their employees, this is better for both the company since healthy employees are sick less and have a higher productivity as the insurer since they have to pay less for care. In The Netherlands 1% decline of absenteeism will earn employees yearly 2.6 billion and 1% increase of productivity will have a value of 6 billion nationally (Krom, 2012). Also insurers can reduce the costs of care due to a healthier lifestyle of clients.

B2C market

Looking at the consumer market we can divide the population in several age groups:

1. Children: age 5-15
2. Adolescents: age 15-25
3. Young adults: age 25-35
4. Adults: age 35-50
5. Middle-aged: age 50-65
6. Seniors: age 65+

These groups are categorized using different articles but mainly based on OECD classification. The main goal is to distinguish different lifestyles with respect to their financial capabilities, interests in (new) technology, (willingness to) influence within their family and interest and tracking of their own health. The first is chosen because we need the users to be able to purchase the product. The last three are chosen according to a combination of a simplified social influence model (Vannoy & Palvia, 2010) and the UTAUT model (Venkatesh, Morris, Davis, & Davis, 2003). Where both the social influence is important to let others use the product but also the value of use and interest in technology.

Some articles define among young adults also the adolescents in this overview, however for a more specific overview a split is chosen. Others even only differentiate between children,
adults and seniors (60/65+), give no data about children or start at 17 or 18 in the youngest group.

Until the age of 15 children are mostly reliable on their parents financially with only having a small job. Age 15-25 most adolescents are starting to earn a little money and getting their first real jobs, however most of the time they are studying, of the workforce in The Netherlands only 11% has no job, in Italy this is 40% (OECD, 2015). The young adults are all in working age however are still working their way up on the career ladder or are still looking for a job. However, most disposable income is in the groups 35-60 where most people are working and have a high salary (CBS, 2013; Ward et al., 2014). From age 60 people retire and receive less income and therefore have less to spend, however these often also have lower expenses and have saved money.

The interest in technology is a second indicator, this can be measured based on the distribution of wearables (Ledger & McCaffrey, 2014) and use and interest in modern technologies such as internet, social media and smart phones (Swindle, Ward, Whiteside-Mansell, Bokony, & Pettit, 2014). It can be seen that both adolescents and young adults have high interests in these technologies, whereas the children and adults less so. The middle-aged group have little interests and the seniors even less.

The third indicator is the influence a person has within their family. The adults with young children have most influence, where when children get older their influences grows a little (Cook, 2001). When a person gets older the influence it has on its children decreases.

Fox & Duggan investigated in what fashion people in different age groups are interested in their own health, and who of those are tracking health indicators (2013). 69% of U.S. Adults track a health indicator like weight, diet, exercise routing, or symptom (see Table 23). Especially elderly (middle-aged and seniors) track indicators, health apps however are used primarily by adolescents and young adults. But this is already indicated at the technology indicator.

The overall results can be seen in Table 3.

<table>
<thead>
<tr>
<th>Age group</th>
<th>Financial</th>
<th>Technology</th>
<th>Influence</th>
<th>Health/Tracking interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children</td>
<td>--</td>
<td>+</td>
<td>-</td>
<td>--</td>
</tr>
<tr>
<td>Adolescents</td>
<td>-</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Young adults</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Adults</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Middle-aged</td>
<td>++</td>
<td>-</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>Seniors</td>
<td>+</td>
<td>--</td>
<td>-</td>
<td>++</td>
</tr>
</tbody>
</table>

Table 3: Age groups comparison

2.2.2 Revenue Model

According to Lewis the revenue model is the most important part of the BM, as he describes a BM in short as: “All it really meant was how you planned to make money” (2014). Even though Lee (2001) states that “a general rule in e-commerce is that there is no simple prescription and almost no such thing as an established business or revenue model for
companies even within the same industry”, it is useful to define and compare the revenue models that may be used by GameBus and/or competitors. By doing an extensive literature study a list was built of a wide variety of business models that can be used by applications that resemble GameBus. Throughout interviews some of these revenue models were discussed about additional possibilities.

**Licensing**

Volume licensing is the most common way of licensing. This kind of licensing allows the buyer, in GameBus's case at first the home care provider, to install the software on a large amount of devices. Often rewarding customers that purchase high volumes of software with price discounts and other benefits (Konary, Graham, & Seymour, 2004). Within this strategy there are two types: via subscription or perpetual licensing

1. **Subscription**
   Licenses is paid with recurring (often annual) fee, it is called a subscription license. If the fee stops being paid, the service is also canceled. Choudhary (2007) found that this type of licensing leads to greater investment in product development which leads to higher software quality compared to perpetual licensing.

   There are several possibilities where a company will buy the product.
   
   1. For their clients, for example health care companies for their elderly as part of their care package or a telecommunication company that adds the product to the phone subscription. Several telecommunication companies offer a similar deal with Spotify Premium already (Dredge, 2013).
   2. For their employees, companies with a high number of employees can buy a product to be used by their employees.

2. **Perpetual**
   In the case of perpetual licensing the customer pay once upfront, giving them the right to run the program as long as they choose, in contrast to subscription licensing. However often this does not imply a right to upgrades, which can be bought per-upgrade or via maintenance agreement (Konary et al., 2004).

**Reverse utility brokerage model**

This business model is a combination of two existing models, the brokerage model and the (reverse) utility model as defined by Osterwalder (2004).

1. **Brokerage model**
   In the traditional brokerage model buyers and sellers are brought together and their transaction was facilitated (Osterwalder, 2004). For these services the broker would receive a cut of the selling price or charges a standard fee to one of the parties (or both).

2. **(reverse-)Utility model**
   A utility model charges users based on the amount they use the product (Rappa, 2004). Electricity and gas companies mostly work this way. Reverse utility means that the more you use a product, the less it costs. Some gyms have this business model, and by going to the gym more often your charge will be less (Mohney, 2014). This can also mean that a discount is given if overall more users are active.
iii. Reverse utility brokerage model

In this combined business model, users who use the product more (or enough) will be rewarded and the users who use the product less (or not enough) will be fined. The company, in this case GameBus, will play as a broker. The fines of the less-frequent users will pay for the rewards of the users who do use the product. Pact App\(^1\) is an example using this model already. You make a weekly pact to exercise more or eat healthier and you set your own fine if you do not meet these requirements. However, if you do manage to keep your commitment you will earn real cash, paid by the members who did not.

Sell to customer

Selling to customer offers the customer the usage of the product. A one-time-sale enables the user to use the product, this is the way most goods are sold. Sometimes additional content can be bought within the previously purchased application. For example updates or to get more features. Studies show that the average revenue per download is higher with paid apps than freemium (discussed later in this list) apps (see Graph 14 in Appendix N).

Advertising

Similar to the huge billboards on Madison Square, advertisers will pay to get their advertisements under the attention when you have enough traffic on your website (Rayport, 1999). However, only with really large traffic it can become really profitable and it can be seen more as an additional profit stream (Rudl, 2005). However, one must be careful using advertisements since customers can get annoyed by ads and even avoid your service to avoid the advertisements (Razorfish, 2014).

Selling tangible products to (fully) use the digital product

Several companies design wearable technology to keep track of certain kind of data. These products must be worn on the user's body for an extended period of time and significantly enhances the user's experience while wearing (Walker, 2013). At Gartner (MacIntyre & Ekholm, 2013) they estimated that wearable fitness and personal health devices will be a $5 billion market by 2016. IHS (2013) predicted that between 2012 and 2017 the wearable health and wellness device shipments will increase 552% and make up over 80% of the mobile sensing health and wellness app device market at this time. Figure 20 shows a vendor landscape of current wearable tech designers.

i. Own wearables

Some manufacturers sell their own devices and have their own services. For example, Dutch market leader in activity trackers (Jacobs, 2014) 'Fitbit' helps you get active, eat better, manage your weight and sleep better by wearing Fitbit's gear and using its scale. Their accompanying online service is free of charge.

ii. External shop

However, many shops sell products they do not produce themselves. Strava has a shop with, among other brands, devices of Garmin. Strava gets a share of the revenue for facilitating the sales.

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1 https://www.pactapp.com/
Selling (anonymized) data

Self-tracking and all that comes with it generates a huge amount of data. This data can be useful to all kinds of companies. The social network PatientsLikeMe (n.d.), earns its money by selling anonymized data to pharmaceutical companies, universities and research labs, as stated in their privacy policy. Synergetics can also apply this revenue model, with or without generating revenue for the users as well.

However research on free and paid health and fitness apps showed that not all apps disclose all data they sell. Privacy Rights Clearinghouse's report (2013) states that, of the 43 apps they examined, 39% (30%) of the free (paid) apps sent data to someone not disclosed by the developer. Privacy is an important factor and a lot of questions remain such as who owns the data, what type of data is stored and who can view this data (Meingast, Roosta, & Sastry, 2006). Governments are evaluating how security and privacy issues should be handled with health related technology (DePhillips III, 2007). But also from a company and user perspective privacy is a concern. Companies indicate that data security is of utmost importance as an SLA parameter (Matuszak et al., 2013). And also individual users are concerned about their privacy when using software. A study by TRUSTe (2013) found that around 90% of the internet users worry about their privacy online and only a little over half of the users trust businesses with their personal information online. This has as effect that almost 90% of the users say they avoid companies that do not protect their privacy, and even up to 96% of users over 65 (TRUSTe, 2013). Therefore it is wise for companies to explicitly document what is done with the data, such as Synergetics is doing.

i. Selling user-created content

Another form of selling data is selling user-created data. In some applications it is possible for the community to build their own content. In the case of Griddlers the users can create their own puzzles which can be used by other players. In the terms-of-use of Griddlers the following clause is included:

“Griddlers may use any ideas, concepts, know-how or techniques contained in any information you may provide, for any purpose whatsoever, including, but not limited to developing, manufacturing and marketing products and other items incorporating such information, and you acknowledge and declare that you provided such information freely knowing that you will not receive any compensation.”

ii. Clinical trial recruitment

In case of specific diseases, patients may be contacted to participate in relevant clinical trials. In case of Inspire (n.d.), clinical trial sponsors pay to be connected to their members who agree on this. PatientsLikeMe also uses this technique. Since with GameBus the data ownership is facilitated through Synergetics, users can be given the opportunity to share their data with specific clinical trials, with or without (monetary) incentives for Synergetics and/or the users.

Donations

Some websites or applications have the possibility to donate to support the project. This can be an active question to donate or a button on a website. For example Griddlers has this option.
Charge a percentage of future saved amount

By improving the health of customers, costs can be spared. Not only direct costs in health care, but also costs on the work place. Healthier workers have reduced absenteeism by illness or disability (Horwitz, Kelly, & DiNardo, 2013). But also as the number of health risks increases, the productivity of an employee decreases (Burton, Conti, Chen, Schultz, & Edington, 1999). Part of the saved costs due to healthier employees can be paid back by the employer to the company who made that happen, or to employees who decide to run with a specific program. In the case of GameBus and ZuidZorg, the challenges ZuidZorg can define have the possibility to increase the health of their clients. Making it an operational benefit to define healthy challenges. This can also be the case for other institutions, such as municipalities for increasing the health of their inhabitants. No occupational health apps were found using this BM however it was identified as a promising emerging BM by Plishtin of Sagebrook Partners (Wolf, 2010). This might be due to the fact that it is hard to quantify exactly how much health saving is due to a specific app or program. However, when insurers add different kind of options within a wellness program, and the overall health costs drop, this might be used as an indication. This only addresses the direct health costs, indirect costs are even harder to measure. With individual clients the insurer may offer GameBus to them when they see that clients using GameBus are on average less costly. This must be scientifically grounded, according CZ. Also, using an app like GameBus nurses might be needed less in specific cases with respect to similar clients that do not use GameBus. These saved costs may return in part to GameBus.

Free Trial

A shift can be seen from traditional revenue models to free models (Andersen, 2008). Cheng, Li and Liu define two versions of a free trial: time-locked free trial and limited version free trial (2015). The combination of both, named hybrid free trial, offers a fully functional trial version for a limited time and after this time disabling (i.e. going to the 'free' version) some (key) functions (Cheng et al., 2015). Below both aspects will be discussed.

i. Limited version

Limited version free trial, as the name suggests, does not offer all functionalities of the software. Nowadays this type of trial is called freemium, a combination of the words free and premium. Limited version free trial was introduced in the late 1980s (Cheng et al., 2015). A definition by McGrath (2010) of the freemium model is the following: “In the Freemium model, a basic version of an offering is given away for free, with the hope of eventually persuading sufficient numbers of customers to pay for a more advanced version”. Freemium is the most popular free business model. In the two leading app-stores (i.e. the Apple App Store for iOS and Google Play for Android) almost all revenue is generated by these freemium apps (see Appendix N). These apps are free to download for everyone, however to unlock all content purchases can be made. Also, especially in games, money can be used to buy items or in-game cash to advance quicker. Reime (2011) shows a causal loop diagram to give more insight in how a freemium model can result in a profit, this can be seen in Figure 6. GameBus offers both a free and a premium value proposition for their clients. Because near zero production costs it is not costly to have users that do not pay, so a free value proposition is possible. Because of the free value proposition, users will use word-of-mouth to spread the word, this will lead to a large user base. Some of these users will have additional needs and will upgrade to premium. This premium value proposition will generate
revenue to increase profit, which will have little costs due to the near zero production costs and the low operation costs. This profit can be reinvested for new features making the (premium) value proposition even better.

\[\text{Figure 6: Freemium causal loop diagram}\]

\textit{ii. (Time-locked) Free trial}

Time-locked free trial offers the full version of certain software, but for a limited time. After this the product must be bought. Time-locked free trial became available in early 2000s to address consumers' uncertainty resulting from the escalating software functionalities (Cheng et al., 2015). In other words, the functionalities of the software were so elaborate that users did not know what they could expect from the software they are buying. Offering the full experience was the only way to give the potential buyers an idea of what was possible. This is a great advantage, since users get to see exactly how great your product is, consequently if they use it often become dependent on it (Zuora, 2014).

However, there are cons to this type of offer. If the software is required only for a short amount of time (i.e. within the trial period), the users will never upgrade and your profits are cannibalized (Cheng et al., 2015). However, since GameBus is not purely a functional application, such as Photoshop, the only profits lost is the payment that was received within the trial period otherwise. More pressing is the fact that when the experience is bad, prospect will never graduate to paying customers, this is also true for infrequent users (Zuora, 2014).

\textit{iii. Hybrid}

Hybrid free trial is a dominant strategy, in that it combines the benefits of reducing consumers’ uncertainty (offered by a time-locked free trial) while capitalizing on the positive network effects created by the increased installed base (offered by a limited version trial), which remains after the full version trial time expires (Cheng et al., 2015).
Several types of consumers can be identified, as shown in Figure 7. Where τ denotes the limited time free trial period. It is important that the buyers group is large enough and remain customer long enough to pay for the Free Riders, Limited version Users and make up for their own Cannibalized Demand. Since Free Riders and the Cannibalized Demand are users of the premium functionalities but do not pay for these extra features, and Limited version Users also bring some forms of (data) costs. Cannibalized Demand can often be seen as lost income, since these buyers are willing to pay for the service. However, as explained in Figure 6 a large (free) user base is also important. Not only because of the factors described above, but also due to co-creation benefits. Since the users can generate content such as challenges this will reduce the costs for Synergetics to create such challenges. Also a larger user base means a richer data set, which is useful for selling anonymized data as described earlier.

**SWOT analysis**

SWOT is an acronym for Strengths, Weaknesses, Opportunities & Threats. Kenneth Andrews popularized the idea that good strategy means ensuring a fit between the external situation a firm faces (threats and opportunities) and its own internal qualities or characteristics (strengths and weaknesses) (Andrews, 1971). SWOT analysis involves the collection and portrayal of information about internal and external factors which have, or may have, an impact on business (Pickton & Wright, 1998). Stacey (1993) describes SWOT as the following: “a list of an organization’s strengths and weaknesses as indicated by an analysis of its resources and capabilities, plus a list of the threats and opportunities that an analysis of its environment identifies. Strategic logic obviously requires that the future pattern of actions to be taken should match strengths with opportunities, ward off threats, and seek to overcome weaknesses.”

A benefit of using the SWOT analysis is easy to make and it is easy to understand. Also, possibly, its greatest advantage is that its use allows management to focus its attention on the key issues which affect business development and growth (Pickton & Wright, 1998).

A SWOT analysis generates a better understanding of the business and factors affecting its performance (Pickton & Wright, 1998) and can be used as inputs to a new mission statement, as part of the inputs to an action plan, as input to a strategy workshop or to start a discussion (Hill & Westbrook, 1997).
3. Methodology

A research methodology is useful to carry out a successful research. Several research designs are developed over the years, such as the empirical and problem-solving cycles by Van Aken, Berends and Van der Bij (2012). Since there is little known about BMs for this type of product the research will be exploratory, and therefore the methodology of Blumberg and Cooper will be used (2011). This methodology is in line with the requirements of the Innovation Management master, starting with a literature study and a research design, followed by a data gathering part and analyzing the results in a later stage. With this methodology the research can be completed within the time frame of 5-6 months set by the Innovation Management program.

3.1 Literature Study

Exploratory studies rely mostly on qualitative research techniques (Blumberg & Cooper, 2011). A literature study is therefore very important for an exploratory study. With this in mind the literature study will be performed about the landscape GameBus will be active in and how its competitors (and potential partners) operate. This will give more insight in the BMs of similar services. SQ1 (How is GameBus unique?) will be answered using this part of the research in chapter 4.

3.2 Research design

After the literature study the rest of the research will start. The research design consists of a design strategy, a data collection design and a sampling design.

Design strategy

From week 5 on a weekly visit at the InnovatieWerkplaats was arranged to keep up with the proceedings of this innovation department of ZuidZorg. Also a day was spent with the GameBus project team to help with the User Experience (UX) and BM development.

After this a deeper analysis of BASE/X was done by reading up on the document about BASE/X by Grefen et al. (2013), the document on Business modeling with BASE/X (Lüftenegger, Grefen, & Weisleder, 2012) and the PhD thesis by Egon Lüftenegger about service-dominant Business Design (2014). Also an informal interview took place with a research intern at the Information Systems capacity group working on Business Models using BASE/X. His experience gave better insights on how to create the radars. With this combined knowledge BM radars were created together with the UX specialist. After these models were finished there was a feedback moment about the correct application of the BASE/X syntax by the BASE/X specialist. After this feedback moment some small corrections were made, for example by updating some terms to make them more compelling. During this phase, some difficulties occurred in the development of the radars. These difficulties and how to overcome (some of) them were discussed with the UX specialist and were documented to give an answer to SQ2.

When the BMs were properly built, the next phase started. Three main stakeholders were important to support the designed BMs. At first the GameBus project leader was interviewed. This first interview was also a feedback moment to practically check whether nothing was missing in the interview protocol and to get a better insight in the length of the interview.
Secondly the Italian partner specialized in BMs was interviewed with questions regarding the applicability of these BMs in Italy (compared to The Netherlands). The third interviewee was the CEO of Synergetics who represents the focal company which will exploit GameBus and should therefore also agree with the chosen BMs and give personal insights. Since these latter two stakeholders have lesser knowledge of GameBus, some questions were different in the protocol with input from the answers of the GameBus project leader and own insights. These parties were interviewed about the BMs in general and asked about the benefit of the visualization in the BASE/X BM radar.

After this phase the BM were optimized further using the feedback and input from the interviews first three interviews. When this was done the new BMs were formulated and the interview protocol was adapted to these new insights, as well as the respective BASE/X BM radars.

After this some other stakeholders were interviewed about the BMs. The current first prospective corporate customers, ZuidZorg and Telecom Italia (TI), were asked about their opinion of their role. Also some game suppliers were already known: RaPIDO (physical), Cameo (social) and CogGames (cognitive) (Van Gorp, Delmastro, Doppio, & de Petris, 2014). This was done via e-mail. These were also asked about their opinion of their role (i.e. game supplier). These interviews were adaptations of the first interview. Again questions were asked regarding the visualization of the BM using the BASE/X BM radar. Adaptations were again applied to the eventual BM radars. This eventually led to an answer to SQ3.

Following a form two models were built to give a more precise image of what the Freemium and Corporate customer BM entailed. A model was constructed to examine the changes of important parameters in the Freemium model on the profit of GameBus. Also an overview was made in Excel to examine how different pricing schemes affect the overall price and discount in the Corporate customer BM. Feedback was gathered using these models as a base. This, together with the qualitative analysis of the interviews led to the answer of SQ4.

**Data collection design**

The data collection design encompasses the way of retrieving data to answer the (sub) research questions as stated in the previous chapter. This can be qualitatively through different kind of interviews, workshops, surveys etc., or quantitatively in many other ways. However since this is a qualitative exploratory study, only qualitative methods of data collection were used. The interview method is a general interview guide approach, this is a semi-structured method where questions and topics are formulated before but there is quite a bit of flexibility in its composition during the interview (Gall, Gall, & Borg, 2003). This will ensure that the same general areas of information are collected from each interviewee; this provides more focus than a conversational approach, but still allows a degree of freedom and adaptability in getting information from the interviewee (McNamara, 2009).

The numbers in the quantitative models are rough estimations and therefore the outcome of these models will not be considered decisive data. However, on both quantitative models feedback was gathered. Synergetics's CEO was contacted to give feedback on certain numbers and outcomes of the model. Also a Business Developer, working at EIT Digital, was contacted to give feedback in a face-to-face meeting together with the GameBus project leader. After this meeting the potential corporate customer ZuidZorg was asked to give feedback on the presented numbers.
Sampling design

The sampling design informs about the specific people targeted to answer different research questions. These are separated by their target market, either B2B or B2C. A third group is involved in both markets. The three groups are the following:

1. General involved parties of the GameBus project
2. Business to Businesses stakeholders
3. Business to Consumer stakeholders

The general involved parties are working on the GameBus project. These stakeholders are shown in Table 4.

<table>
<thead>
<tr>
<th>General Stakeholder</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>GameBus project leader</td>
<td>Interview protocol feedback and checking if BMs are in line with thoughts of GameBus project leader</td>
</tr>
<tr>
<td>CEO of Synergetics</td>
<td>1. Insights from data management party regarding feasibility</td>
</tr>
<tr>
<td></td>
<td>2. Feedback on quantitative model</td>
</tr>
<tr>
<td>Italian partner working on Business Models</td>
<td>Identifying differences between The Netherlands and Italy regarding developed business models</td>
</tr>
<tr>
<td>Project team Synergetics</td>
<td>Information exchange about quantitative costs of GameBus for Synergetics, mainly focused on the data BM.</td>
</tr>
<tr>
<td>Business Developer at EIT Digital</td>
<td>Feedback on quantitative model</td>
</tr>
</tbody>
</table>

Table 4: General involved stakeholders GameBus Project

Besides these general stakeholders, also B2B stakeholders are interviewed on their thoughts on different Business Models.

1. **Knowledge Institutes, like the TU/e**

TU/e is known for its innovativeness and besides a large client base (students) also has a large employee base (professors and supporting personnel). As mentioned in the GameBus introduction, rich data is gathered by GameBus and knowledge institutes might be interested in leveraging this data (Van Gorp, 2015c).

2. **Municipalities, like Eindhoven**

Since 2015 a law makes it the responsibility of the municipality to provide the means so people can stay at home longer through the Wet Maatschappelijke Ondersteuning (WMO). GameBus may support the municipalities in this task (Van Gorp, 2015c), as well as social reintegration (Vervenne, 2015).

3. **Home care organizations, like ZuidZorg**

Similar to the municipalities home care organizations have a task to help people who live at home to do this the best as possible. GameBus could be used to support ZuidZorg in this task. Also operational costs can be spared by using GameBus, since less visits are necessary by nurses from the home car organization due to extra efforts by the family or friends of the elderly (Van Gorp, 2015b).

4. **Large companies with many customers, like the telecommunication company Telecom Italia**
If municipalities and health care organizations are difficult to engage in new innovative projects, large companies such as the telecommunication company TI could be used as a way to reach the customer. Telecommunication companies can add GameBus to the bundle contracts they offer to pay beyond the price of their data contract. TI is included in the GameBus consortium partly to explore this option.

5. **Insurers, like CZ**

Insurers are constantly looking to make health care more affordable. GameBus might help them in this mission.

6. **Game Suppliers, like CogGames, RaPIDO and CAMEO**

Game Suppliers are an essential part of GameBus since it is useful to have more game suppliers added to GameBus to create a more engaging experience for the users. Also possibly game suppliers are willing to pay for specific privileges within GameBus.

<table>
<thead>
<tr>
<th>Stakeholders B2B</th>
<th>Specific interviewed party</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge institution</td>
<td>Manager DPO/P&amp;O at TU/e</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Professor Information Systems working at a large Dutch technical university</td>
<td>X</td>
</tr>
<tr>
<td>Home care organization</td>
<td>ZuidZorg</td>
<td>X X</td>
</tr>
<tr>
<td></td>
<td>Employees at the innovation workplace</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Employee at the Innovation workplace</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Nurse</td>
<td>Validation of business model (Case study)</td>
</tr>
<tr>
<td>Telecommunication provider</td>
<td>Two engineers working with app development at TI</td>
<td>X X X</td>
</tr>
<tr>
<td>Insurers</td>
<td>Two consultants in health care innovation working at a Dutch health insurer with over 4 million clients</td>
<td>X X X</td>
</tr>
<tr>
<td>Game suppliers</td>
<td>CogGames (developed by TI)</td>
<td>Reasons for connecting</td>
</tr>
<tr>
<td></td>
<td>Cameo</td>
<td>Sponsorship</td>
</tr>
<tr>
<td></td>
<td>RaPIDO</td>
<td>Upgrading users</td>
</tr>
</tbody>
</table>

Table 5: B2B stakeholders

An interview was supposed to be held with the municipality of Eindhoven, however despite many attempts no interview could be arranged. Also, due to strategic differences, RaPIDO was disconnected from the GameBus project and therefore the interview with this party was less useful.

As interesting parties for the B2C market four groups are determined: The young adults,
adults and middle-aged group who were regarded most viable from theory and the cross-fitters or active outdoor sportsmen who are really competitive especially for the commitment model.

<table>
<thead>
<tr>
<th>Stakeholders B2C</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young adults: age 25-35</td>
<td>Freemium</td>
</tr>
<tr>
<td>Adults: age 35-50</td>
<td>Commitment</td>
</tr>
<tr>
<td>Middle-aged: age 50-65</td>
<td>Data-sharing/privacy</td>
</tr>
<tr>
<td>Cross-fitters / Active outside sportsmen</td>
<td></td>
</tr>
</tbody>
</table>

*Table 6: B2C stakeholders*

The Freemium stakeholders are addressed by the UX colleague of GameBus in her PDEng research.

### 3.3 Interview preparation

The two parts of preparation are the questions & instrument development and formulating the interview protocol.

#### Question & instrument development

When it was clear who should be interviewed and what data should be retrieved a specific set of questions was drafted to retrieve the necessary data. These questions together form an instrument used in the interviews or surveys.

After finishing the set of questions a pilot test is recommended, to determine if there are flaws, limitations or other weaknesses within the interview design (Kvale, 2007). This pilot test was done with the project leader of GameBus. It became clear that the interview would take rather long so time management was important during the interviews, also the introduction was changed on some details.

#### Interview Protocol

Since a wide variety of stakeholders was questioned, some questions relevant for one group were irrelevant for other interviewees. A protocol can help to extract only the useful questions, and therefore help achieving better results of the data collection. This is especially relevant regarding different business models for different stakeholders. Therefore for different stakeholders different protocols were formulated. Appendix T gives an overview of all interview protocols.

#### Validation

After the interviews all B2B stakeholders were sent the summary of their interview to identify if their thoughts were correctly put to paper and if there were no misinterpretations, also it was asked whether their names and responses could be published non-confidentially. The interview of TI was also checked by a colleague who could not be present at the interview. The interviewee of CZ as well as the CEO of Synergetics had some adjustments, the rest of the respondents agreed with the summary. All who replied also agreed with their names being published non-confidentially, except for Respondent [5]. Only Respondent [4]
did not reply to any follow-up email. An overview of all summaries can be found in Appendix V. The summaries of Respondent [4] and Respondent [5] are included in a confidential appendix.

**Coding**

After the interviews were completed they were summarized. The interview was already compartmentalized into the different Business Models and a dedicated BASE/X BM radar part. Codes were developed in accordance with the three main parts of the Theory chapter (SWOT, Business Model and BASE/X). The interviews were also the interviews are based on these points.

This resulted in four SWOT codes: Strength, Weakness, Opportunity & Threat. A target market code, with four sub codes: Dutch, Italian, B2B & B2C market, a value code and a revenue mode, with five sub codes: Licensing, Reverse utility, Advertising, Selling data and Free trial (Freemium). An overview can be seen in Figure 8.
Figure 8: Coding references
4. Literature study

Preliminary to my thesis a literature study was conducted to find an answer to the research question:

“Is GameBus a relevant addition within the quantified self landscape to track one’s life and stimulate social, physical and cognitive activity?”

In this part of the thesis we will lay emphasis on the health measurements or features GameBus offers. This will be done by answering the following two questions:

1. What are GameBus's current features (and alternatives)?
2. What are GameBus's competitors and potential partners and their features?

The answer to these questions subsequently will lead to the answer of SQ1: How is GameBus unique?

4.1 Features & characteristics of GameBus

Several features and characteristics can be identified relating to the GameBus application. The main characteristics are the health measurements, also some other functionalities are investigated such as level of gamification.

Health measures

The first category in which GameBus can be compared is by its health functions. A frequently cited and still relevant article by John Ware will be used to give insight to the different standards for validating health measures.

John Ware differentiates 5 different standards for validating health measures: physical health, mental health, social functioning, role functioning, and general health perceptions/general well-being. However the latter two can be discussed to be superfluous. Role functioning refers to the performance of, or capacity to perform, usual role activities; included are formal employment, school work, and housework. Since role functioning is limited (in most populations, including The Dutch and Italian) to physical health problems and in rare cases psychological (mental) problems (Ware, Jr., 1987) this measurement falls in either these two categories. The general health perception is combination of the other factors and therefore not a factor that can be influenced directly. GameBus is a project funded by EIT Digital Labs and they set a goal to improve mental, physical and social well-being (EIT ICT Labs, 2014). Therefore GameBus offers functions achieving benefits in these health measures in stimulating healthy activities:

I. Achieve cognitive benefits

As people get older, especially passing 65, the structure of the brain and cognitive functional declines (Basak, Voss, Erickson, Boot, & Kramer, 2011). To prevent such decline, games could be used to help (Baranowski, Baranowski, O’Connor, Lu, & Thompson, 2012; Baranowski, Buday, Thompson, & Baranowski, 2008). Today, there is a high number of brain-training games available on the market. A search on Google returned almost 500,000 results on “Brain training games” and also in the Google App store over 250 apps are found. However, most of these do not have a theoretical background. Some cognitive factors are stimulated significantly more than playing average games, such as executive functions and processing speed (Nouchi et al., 2012). Nacke, Nacke & Lindley affirm the positive effect of
logic-training games (2009). However not only specific 'brain-training' games are useful for a healthy brain. Kühn et al. (2011) found that teenagers who played computer games had larger local brain volumes and more cortex than their non-gaming peers. A study involving older adults had as a result that after only 23.5 hours of game-play executive control functions, such as task switching, working memory, visual short-term memory, and reasoning were improved (Basak, Boot, Voss, & Kramer, 2008).

GameBus will connect to different games to achieve different cognitive benefits through game-play, such as Griddlers. But also in the GameBus project TI is working on a cognitive brain-training game: CogGames. CogGames is an Android application for the training of people with an attention deficit. CogGames contains games with the goal to train different types of human attention, namely selective attention, vigilance & sustained attention and reaction time (Saponara & Petrazzuolo, 2015). CogGames has a theoretical background since it was developed in collaboration with neuropsychologists to define requirements to train different phases of attention and satisfying specific medical requirements (Saponara & Petrazzuolo, 2015).

II. Achieve physical benefits

Ware Jr. defines physical health as: “Physical health is commonly measured in terms of limitations in the performance of, or ability to perform self-care activities (e.g. eating, bathing, dressing), mobility, and more strenuous physical activities” (1987). An abundance of studies indicate that exercising more helps to keep physically healthy in a way Ware Jr. describes, even low-intensity exercise like walking (Ogawa, Oka, Yamakawa, & Higuchi, 2003). Most people also know that this is the case, but still 30% of American adults report no leisure-time physical activity (Jitramontree & Schoenfelder, 2010). Within the GameBus project Head Up Games was supposed to be connected as a physical partner. Head Up Games uses RaPIDO to make pervasive games for children by taking traditional outdoor games as a basis and enhancing these games using technology that is suitable for supporting the behavior patterns as seen in the traditional outdoor games, instead of trying to take screen-based computer games outside (Soute, 2013). However, as mentioned before, different strategic views about connectability resulted in a detachment from the project by RaPIDO and no partnership will be formed in the near future.

Other physical applications have been integrated though. Using a third party Tapiriik twelve of the most popular running and cycling apps (including Strava, Runkeeper, Endomondo and Garmin) are connected to GameBus through the service Dropbox.

III. Achieve social benefits

The increased longevity of today's elderly is not only marked by declining cognitive and physical health, but also brings depression, isolation and loneliness (Drewnowski & Evans, 2001). Compared to the other two health focuses described above, research on increased social interaction and social support is pursued significantly less with regards to the (positive) effects gaming can have (Hall, Chavarria, Maneeratana, Chaney, & Bernhardt, 2012). However, there is still research about the use of technology to achieve social benefits. According to the professionals who work in the field, the technology the elderly mostly desire are services that support their social relationships (Mikkonen, Väyrynen, Ikonen, & Heikkilä, 2002). Furthermore, better social networks and greater participation in social activities are generally associated with lower risks of cognitive decline (Glei, 2005).

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2 http://www.griddlers.net/
3 https://www.tapiriik.com/
Social support is regarded to have many positive effects on a person's health, not only in general (Penninx et al., 1998; Stewart, 1993), but also in specific cases (a small selection can be seen in Appendix E), so achieving this is worth pursuing.

Today, everything is about social media, some industry guru's claim (Kaplan & Haenlein, 2010). However, for 'social' to have a positive effect, such as described above, the connections should be meaningful and positive. Counting social activities or ties is similar to counting someone's feelings, without reference to whether they are positive or negative (Ware, Jr., 1987). One cannot compare one type of social interaction with another, since every person has its own favorite way of connection to its friends, family and other peers. However, we can categorize social support into four functions: Emotional (esteem or appraisal), tangible (instrumental), informational (problem solve) and companionship (belonging) support (Langford, Bowsher, Maloney, & Lillis, 1997; Wills, 1991). Emotional support provides caring, empathy, love and trust to the receiver, making them feel loved, esteemed and valued (Cobb, 1976). Tangible support is a more concrete form of assistance, being tangible goods and services (House, 1981) or aid (Krause, 1986), such as performing work or giving financial support. Informational support is given by assisting in form of informing the person in times of stress (House, 1981; Krause, 1986). The last form, companionship support, will give the person the feeling it belongs somewhere, giving it a sense of social belonging (Wills, 1991).

When there can be made no claim to any of the four social support types, it will not regarded as 'social' in this study. However, most online applications have a way of giving social support in form of 'belonging' to a certain group, thus giving 'companionship support'.

Within the GameBus project a partnership with CNR results in a unique feature added to the application: Cameo. Cameo is a light-weight context-aware middle-ware platform for mobile devices designed to support the development of real-time mobile social network (MSN) applications (Arnaboldi, Conti, & Delmastro, 2014). For GameBus this can be used to track real life social interaction, i.e. physical meetings between people, for example a visiting the grandmother. Also nearby people with shared interests (who are often at the same location) can be detected, making them able to share content, experiences, and open discussions (Arnaboldi, Conti, & Delmastro, 2011).

Other characteristics

There are some other features that can be identified, which are present in GameBus:

I. Allowing external applications

One of GameBus's significant features is the capacity to integrate a wide variety of external apps due to its open API. This way users can keep using their own apps, but still be able to use the features of GameBus.

II. Gamification aspect

Gamification is, simply put, “the use of game design elements in non-game contexts” (Deterding, Dixon, Khaled, & Nacke, 2011), in this case a Health & well-being context. Lister, West, Cannon, Sax & Brodegard (2014) extracted six core components of gamification from the behavioral and public health literature as defined by health professionals: Leader-boards, levels of achievement or rank, digital rewards, real world prizes, competitions/challenges, social or peer pressure. GameBus scores 6 out of 6 so can be qualified as advanced. Of course it is not a goal itself to score 6 out of 6, but this clarifies that GameBus was designed based on gamification theory. An additional point within this
gamification aspect is the fact that GameBus strives to personalized games and challenges, giving every player the chance to win.

III. Personal data ownership
Due to the collaboration with Synergetics, all data of the users are stored in a Personal Data Storage. Nowadays data is a valuable commodity and owners of it can use it for commercial purposes. Synergetics makes it possible to let users commercially utilize their own personal data in a secure way.

IV. Availability & accessibility
GameBus strives to include everybody, thus making the service available and accessible for everybody. Whether you are an active sportsman, love your books and puzzles, never held a device in your life or are an active 'quantified selfer'. Everybody should be able to participate in the GameBus experience, be able to be triggered to do different kinds of activities and able to win (as described in the gamification aspect).

V. Unobtrusiveness
GameBus strives to be as unobtrusive as possible. Unobtrusive means not noticing its presence. For GameBus this translates into the fact that without noticing, the user uses the GameBus services. GameBus runs in the background while the users live their everyday life and will only be notified by GameBus when it is necessary or the user wants to see specific information. This means users should not be responsible for starting or stopping activities (or even challenges). Momentarily this is not yet the case, but the goal is to reach this point.

4.2 Competitor's alternatives
On some levels there are alternatives to GameBus's approach. These will be discussed below in the same categories.

Health measures
Besides the three basic health measures GameBus uses, there could be identified a fourth health measurement:

Stimulating a healthy diet
For some companies a part of their functions consists of measuring and tracking nutritional aspects of the user. According to Factora (2010) nutritional status is a vital part of health maintenance and preventive measures, along with the three stimuli GameBus is already addressing (i.e. physical, cognitive and social activity). For example Fitbit allows you to track your weight, water ingestion and calories. It also offers a food plan to lose a specific amount of weight. Since it is technically not yet possible to measure this unobtrusively GameBus will not address this type yet.

More Detailed measurements
Many applications focusing on cognitive health separate this health measurement into different measurements, where every aspect is trained using a different game. Instead of overall cognitive health, it could be split up in detailed views of their progress or status in

4 http://www.collinsdictionary.com/dictionary/english/unobtrusiveness
many different factors such as language, thought, memory, executive function (the ability to plan and carry out tasks), judgment, attention, perception, remembered skills such as driving, and the ability to live a purposeful life (Alzheimer’s Association and Centers for Disease Control and Prevention, 2013).

Other characteristics

Other additional functions, not present in GameBus, can be found among other parties.

Training/tutorials

Training videos can help motivate people to exercise, while other tutorial videos can help with doing the exercises right. For example a high intensity high interval workout training video, or a video explaining step by step how to solve a certain puzzle. Strava has specific workout videos such as Hill Repeats and Progression Runs.

However, when we look at these parties as partners instead of competitor, GameBus can benefit from this and other possible functions by connecting to the right partners/game suppliers. This can be with a game supplier like Strava, with a new alliance with a local gym or a customer like ZuidZorg.

4.3 What makes GameBus unique?

The market for quantified self apps and e-games is growing. Therefore a lot of competitors or potential partners of GameBus are active in this field, however to map all of them is not feasible, nor is it (within this scope) useful. During the literature study many apps and platforms were analyzed, of which some are also present in the GameBus proposal (Van Gorp et al., 2014). A selection is made of ten different types of applications, to create a broad spectrum of applications.

In Table 7 an overview is given of the Health focus and other characteristic of GameBus and 10 relevant potential partners or competitors (i.e. DisciplineXGames, Fitbit, Fitocracy, Fitstar, Google Fit, Griddlers, MapMyRun, PatiensLikeMe, Strava & TicTrac). Strava can be compared to similar apps such as Runkeeper, Endomondo etc. except for the fact that these often do not offer specific training videos, but do offer training schedules in their premium version. This can also be said about some other applications, but these do not differ much in health focus or otherwise, therefore they are not included.

Note that, some 'competitors' can be used as a game supplier or technology provider, making them a (potential) partner for GameBus. For example Griddlers, who is already a partner, and Fitbit.
Most of these apps also have a premium function. Their prices are given in Table 8.

<table>
<thead>
<tr>
<th>Name</th>
<th>Price per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>GameBus</td>
<td>?</td>
</tr>
<tr>
<td>Fitbit</td>
<td>£40 (± €55)</td>
</tr>
<tr>
<td>Fitocracy</td>
<td>€ 45,00</td>
</tr>
<tr>
<td>Fitstar</td>
<td>€ 40,00</td>
</tr>
<tr>
<td>Griddlers</td>
<td>€ 40,00</td>
</tr>
<tr>
<td>MapMyRun</td>
<td>€ 30,00</td>
</tr>
<tr>
<td>Strava</td>
<td>€ 60,00</td>
</tr>
</tbody>
</table>

Table 8: Price of benchmark premium services

GameBus looks very similar to DisciplineXGames (DXG). However there are several important differences. DXG solely relies on individuals challenging each other, preferably with their own money involved. This is not only a way to activate and motivate people but also as a source of income. People can earn money by completing tasks given to themselves or by friends, when they do not reach this target they lose money. Whereas GameBus focuses on much more (social) motivational triggers to do these challenges, also with different rewards for completing them and a more complex challenge system.

Also, most apps do not disclose what is done with the data of the users, and data is definitely not secured until the user consents to the data distribution. GameBus makes this possible thanks to Synergetics data storage.
5. BASE/X evaluation

In this chapter SQ 2 & 3 will be discussed.

5.1 Challenges

SQ 2 asks which challenges were encountered when BASE/X was applied for creating Business Models for GameBus. Together with the UX specialist several problems were identified:

1. You tend to replicate the examples given in the documents describing BASE/X.
2. Since it was not exactly clear in what customer groups were most viable and what their perceived value was, it was unclear for what customer a radar had to be developed.
3. Some types of customers seem the same, but have different value-in-use so a different radar had to be build. But it was difficult to see exactly which ones could be combined in the same radar.
4. At first the 're-seller' seemed to be a specific business model. However this can be seem as just a distribution way, and not a specific business model.
5. Defining what exactly is the co-creation activity and the value proposition can be difficult.
6. Coming up with short but clear terms can be difficult.

5.2 Rating BASE/X

“How do the GameBus stakeholders rate the BASE/X Business Model Radar related deliverables?” was SQ3. During the interviews stakeholders were asked to give answer to four questions about the applicable BM radars:

1. How understandable are the terms in the radar?
   ◦ This is to test whether all used terms are unambiguous and clear.
2. Is it clear what the BM are about?
   ◦ This is to test whether respondents understand what the goal of the BM is.
3. How complete is this BM representation?
   ◦ This is to check if the respondents have the feeling items are missing.
4. To what extent does this radar help to make the BM concrete?
   ◦ This is to test whether the radars support the BM in a positive way.
The corporate and freemium radars score averagely an 8. However the data model scores a meager 6. The commitment and upgrading radars score a 6.8 but these are only rated by two persons (respectively Synergetics and the Italian partner in the general interviews and CogGames and Cameo in the game suppliers email questionnaires).

Based on the weighted average of the factors we see that the radars lack a bit in clarity. This may indicate that at some points the radar does not explain what is meant in the BM. Overall the radars score a 7.5 but this could be misleading since the top radars have more weights due to more ratings. Unweighted the average would be 7.1.

Stakeholders indicated that the model on itself would not be enough to grasp the idea of what kind of business model is used.

5.3 Indicated problems & improvements

Several suggestions were made to improve the BASE/X BM radars.

1. It was proposed that it might be useful to make clearer that the top ring (cost-benefit) is specific for one party, where towards the middle it becomes more an overall use. This can for example be done by making the lines thicker at the top and dotted at the bottom. It is also indicates that this bottom ring should be visualized in such a way.

2. The value-in-use is meant for one stakeholder, however this is not always clear. This can be solved by identifying only one customer to which the radar is aimed and placing the name of the stakeholder above the value proposition.

3. The open spaces may make people think maybe some stakeholders are being left out, this can easily be solved to make the number of spaces equal to the number of stakeholders.

4. The fact that it is a radar, makes reading it harder when the terms are not horizontal, especially when reading from a computer. It is therefore wise to make sure the radar remains readable by keeping the terms as horizontal as possible.

5. The connection between stakeholders isn't always clear, this is especially the case in the data model. No improvements are found to this problem yet.

6. The DPO employee of the TU/e didn't like the small overview at the bottom and would rather see it in the radar itself.

Integrating points 1 to 4, a new BASE/X BM radar template is shown in Figure 9.

### Table 9: Average BASE/X ratings

<table>
<thead>
<tr>
<th>Understandable</th>
<th>Corporate</th>
<th>Freemium</th>
<th>Data</th>
<th>Commitment</th>
<th>Upgrading</th>
<th>Unweighted Average</th>
<th>Weighted Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear</td>
<td>7,7</td>
<td>7,7</td>
<td>5,8</td>
<td>6</td>
<td>6,5</td>
<td>6,7</td>
<td>7,1</td>
</tr>
<tr>
<td>Complete</td>
<td>8,3</td>
<td>8,5</td>
<td>6</td>
<td>6,5</td>
<td>6</td>
<td>7,1</td>
<td>7,7</td>
</tr>
<tr>
<td>Concrete</td>
<td>7,9</td>
<td>8,4</td>
<td>5,8</td>
<td>6</td>
<td>8</td>
<td>7,2</td>
<td>7,6</td>
</tr>
<tr>
<td>Average</td>
<td>8,0</td>
<td>8,1</td>
<td>6,1</td>
<td>6,8</td>
<td>6,8</td>
<td>7,1</td>
<td>7,5</td>
</tr>
<tr>
<td>Count:</td>
<td>7</td>
<td>11</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The corporate and freemium radars score averagely an 8. However the data model scores a meager 6. The commitment and upgrading radars score a 6.8 but these are only rated by two persons (respectively Synergetics and the Italian partner in the general interviews and CogGames and Cameo in the game suppliers email questionnaires).
Figure 9: New BASE/X template
6. Interview results

The ideology behind GameBus and its potential is recognized by the different stakeholders interviewed during this research. All respondents had their own view of what were the strengths and weaknesses of GameBus were, currently and (possibly) in the future. Also, depending on their background they had ideas about what target market could be reached. Especially the Italian stakeholders gave some extra insights in their own market. The value GameBus could offer them was viewed differently by different stakeholders, as to be expected. The different revenue models were also discussed, depending on the stakeholders that would possibly deal with them. In Appendix X an overview is given of all coded material. If a claim is made this will be indicated by the unique code of that claim. This unique code is constructed as follows: The first number is the number of the respondent (1 - 12) and the second number (separated by a colon) is the moment in the interview the claim was made (1 being the first claim, 2 the second etc.). Some remarks are made in occasions such as informal (email) Q&As these are marked with just the respondent's number.

6.1 SWOT

During the discussion of different business models strengths, weaknesses, opportunities and threats regarding GameBus in general, the target market or revenue models were identified. In this paragraph only the terms regarding GameBus in general will be discussed, as the other two will be discussed in their respective paragraph.

6.1.1 Strength

A key strength of GameBus is that it supports people by activating their own network such as friends and family to achieve a better lifestyle and thus becoming healthier. This strength can convince insurers, because if health becomes cheaper by using GameBus, this is a positive point for insurers (2:6). An insurer agrees that it is nice to have the very health as a client (5:22).

Also, due to co-creation Synergetics, sponsors and corporations are not forced to make challenges, they can be re-used (1:1).

Another strength is that GameBus does not completely replace home care, since if there is a nurse who comes to put on clothes at an elderly, with GameBus this need does not suddenly stop (5:5). However e-health does replace normal care in some ways, sparing costs.

The fact that there is a possibility to assign different point to different users is a distinctive feature of GameBus (5:26).

With GameBus (young) technology savvy individuals can help the elderly in their teams to be able to compete in the challenges (7:2)

Support can be an activity of co-creation as well. Besides a frequently asked questions page, a forum can be set up where users help each other with their problems, sparing valuable FTEs of supporting employees (Respondent [1]).

6.1.2 Weakness

Since GameBus is a new app, some parts may scare users such as consenting to give data or
pledging money using the commitment app (3:9)

Another issue is the fact that cheaters could negatively affect the leader-boards (5:24) this is a problem yet to be solved.

Current distinction of users is just around age, expanding might be useful but harder from a challenge-design point of view (5:27).

Cameo is only compatible with Android for now, while iOS has a huger market share. For example ZuidZorg chooses for iOS due to its simplicity (6:1).

Many older people might not have a smart phone, and if they do, just use it for calling and maybe messaging (7:1). They might not be persuaded by colleagues and peers to do otherwise (7:2), in contrast to the young/old relationship where this is the case. Also these persons are not familiar with these kinds of apps and may not understand how to use it, especially special features such as pledging money (Respondent [2]).

If an app is forced upon people they will most likely not use it (7:11).

Rewards and financial stimulus could be too low to engage people in healthy activities for old and sick people (8:18).

6.1.3 Opportunity

If funding is continued in 2016, the continuation of the project is safeguarded.

To seduce people to buy GameBus in a larger amount a pack of 10 persons could be a lot cheaper (per person) than a pack of 4 (1:14; 3:5).

Smaller game suppliers might pay GameBus to be featured in for example some form of market-place (1:17; 3:8), this would be the job of a sales person to attract and negotiate with these game suppliers (Respondent [2]). Also some applications might see use of connecting to GameBus because large (numbers of) clients requests such a connection (Head up Games, 12:3).

There is a possibility to give a more detailed view of health, such as deeper cognitive analysis or added psychical conditions (2:10). Also not only physical, cognitive and social but also measurements such as diet can be included.

6.1.4 Threat

It is not hard proven that certain types of prevention really reduces the costs (8:24)

A fear of cannibalizing their own work is present at health care organizations, due to less nurses needed by their clients (Respondent [6]). However since the need for home care is only growing, GameBus and other e-health tools will become essential to give the right care (5:2). If these companies do not move with the flow they will seize to exist whatsoever, since keeping to the old fashion has consequences as well (5:6). However, this fear exists.

In this day and age a lot of quantified self and e-health tools are being developed (5:33), as my literature study also explained. At a large insurer they have done pilots similar to GameBus, for example using Angel (5:32). Also the different layers make it difficult for the clients to know what combination of apps they should use. First you have apps that track physical movement (like Strava), then an app that combines all physical apps (like Tapiriik)
and on top of that even another app (like GameBus) (5:33). The threat of competitors is real and eventually the companies and individuals will choose the combination of apps they like best.

The idea now is that there are many concerns about the ability of patients to manage/share their own data. Since these patients, chronic patients, are often with a low education level this could be problematic (8:4).

Another threat is the fact that a lot of apps are hypes; they are popular for a short amount of time and after that they disappear and the number of active users drops. The difficulty is in keeping the users active after the new fun phase is over (8:11). This trend can also be observed with some people using activity trackers, after a while they are not interested in the same information (Respondent [5]).

If a critical mass isn't achieved this can undermine all business models (9:19). The experience requires an active group of users who participate in and create challenges. This will also have the effect that sponsors are not being attracted, companies are harder to convince and data is not worth much with just a few users.

### 6.2 Target Market

Some answers given by Dutch stakeholders identify the Dutch market, as is also the case by the answers given by the Italian stakeholders. Some of these claims may very well also be true for respectively Italy or The Netherlands. However, for example, there has been no interview with an Italian insurer, and most claims about the Italian insurance policy was either confirmed or denied by our Italian partners. The claims that were confirmed true or false for both markets will not be included in the Dutch or Italian market, but in the B2B/B2C market paragraphs.

#### 6.2.1 Dutch market

From an insurer point of view some of the preventive care options will become part of the package (5:9; 8:1 & 8:6), making it a lower threshold for users and companies to invest in GameBus since they can get a (partly) refund from the insurer if they use it. It will be reimbursed that somewhere it has to be proven that it reduces costs somewhere down the line. That means that clients of the insurer will go to the hospital less, require less home care, become generally less ill. This is hard to prove (5:10).

Companies can have contracts with insurers, collective insurances, where the company and insurer investigate how to keep the employees healthy. Topics such as preventive care, sustainable employability are most of the time part of the agenda (5:18).

In the region of Eindhoven there are organizations that install internet, these companies can be targeted to make a bundle of GameBus and internet (1:12).

As said before, in The Netherlands municipalities are in charge of social reintegration, GameBus could be used to facilitate this. Also WMO is a task of municipalities. These projects may not cost too much money, and with the discount possibilities GameBus can also bypass this obstacle (2:7). Insurers are also involved with municipalities about indexed preventive care, which falls within the health care regulations (5:3) such as training about how to fall better, leading to less hip operations. However, selective prevention, where
GameBus is in, triggering people to live healthier is much more difficult, but it is also the responsibility of both insurer and municipality (5:4).

6.2.2 Italian market
In Italy, as literature also indicated, care providers have (5-year) contracts with the government (3:1). Partly because of this innovation is not a big factor in the public health system, private health organizations do not have this problem but have a lower client base (3:2). Therefore it is indeed wiser to go to private (health) organizations than public organizations or one needs to go directly to (national) governments (1:7).

The individual target customer would not be much different with respect to The Netherlands, however special emphasis could be laid on the parents or middle-aged who are familiar with sports and apps (3:7), who can join the whole family together more as a form of team building rather than health related (9:9). Team building and relationships are very important in the Italian ‘family’-culture, the concept of family is very important (9:8).

Also, activities done by Italians probably differ from the Dutchmen. Italians often do active outdoor activities such as tracking, hiking and mountain climbing.

6.2.3 B2B market
Stakeholders indicate that they see benefit of GameBus for their employees (5:12; 6:7; 8:13) however they have doubts if they should be the ones to pay for their clients (9:4; Respondent [6]). The departments that should be targeted within these organizations is mostly Human Resources or Marketing and Communication and indirectly the board. For their employees the focus mostly lies on the (Dutch acronym:) BRAVO prevention themes: Exercise, smoking, alcohol, nutrition and relaxation (8:7).

Especially health care organizations have the opportunity to spare operational costs, if this is large enough many companies can use GameBus profitably. Besides ZuidZorg home care organizations such as Archipel and Lunet Zorg in the Eindhoven region have an innovation budget that can be used for such occasions (1:6).

The main focus lies on telecommunication companies and health care organizations as discussed earlier. However there are little limits to what kind of companies can be addressed, local companies like museums or cinemas can also be targeted (3:3) also universities (Respondent [8]) or sports clubs (1:16). However favorable these will reaching out to GameBus when it hits a critical mass (7:10).

Insurers may seem like a nice additional target, but from a PR point of view companies like insurers cannot have the image that they are favoring healthy clients over the rest (5:21), due to the fact that The Netherlands is a welfare state where solidarity is important and everybody should be treated equally (5:23). In Italy this is viewed the same (Respondent [3]). Insurers cannot ask more money from old or sick patients, which is the same as giving discount to healthy young clients, however CZ is investigating whether financial bonuses can be offered if people behave healthy over a set of time (8:17). This can be tracked and rewarded through GameBus challenges.

However, Respondent [5] has the opinion that home care organizations might not even be a right target market to begin with, they believe focusing more on the consumer market is more feasible (5:7). However if home care organizations decide to pick up such an application it is
only good and can be an addition to the care provided since the elderly will have more to do (5:8).

### 6.2.4 B2C market

Multiple stakeholders indicate that a lot of users is required for GameBus. The B2C market is the easiest way to reach a great audience and since GameBus is meant for all age groups, active or not this target market is very large if you combine The Netherlands and Italy.

A family member who wants to give the whole family GameBus is an ideal target. This could be a 40-50 year old male with children and (living) parents (1:9; 2:8, 3:6), they will create a big circle and deliver many users in one subscription. The youngsters could also initiate this type of care, since they might see health problems in their family, consequently the young will help the elders (2:9). But also one or two users who want to join should be targeted. This could be friends of people who have GameBus through their family, but want to compete with them on GameBus (1:13).

### 6.3 Value

Offering GameBus can be of added value to companies due to customers changing or comparing brands from time, such as telecommunication providers or insurers and might want to try something new (1:10), giving these companies competitive advantage.

Companies using GameBus as advertisement will propagate a healthy image (5:25), it is a nice marketing instrument (1:2) and ideal to promote a new product (3:16).

The competitive advantage can also be used to become an attractive employer, since people will choose their employer more and more based on the secondary benefits, looking at the popularity of Google (8:20).

For game suppliers opening their game up to GameBus users can increase their market share and gain extra revenues (11:5). If the user base is large enough, wearables and apps will be open to promoting within GameBus (to upgrading users) (3:8). The connection can also help to further personalize the features of the game and make it more appealing for the users (10:3).

Also GameBus is a way to keep people healthy, such as you employees as discussed earlier. Most stakeholders indicate this is a realistic possibility within their company (5:12 & 5:13; 6:7; 8:7 & 8:13; 9:1), but before they would buy in big, they would like to see some proof that this will increase the health of their employees and decreases sick days. Scientifically this is hard to proof (5:10). Many corporations are trying out health care programs, but most of them stop after the pilot phase (Respondent [5]). When companies already have certain health programs in place, convincing that GameBus is better might be hard (Respondent [8]). However it could be combined with existing efforts, for example to stimulate employees to use the bike more (7:3). In the province of Noord-Brabant this is already done by the B-rider initiative, GameBus could play a role in promoting such initiatives as well (7:6).

Another value will be the decrease of operational costs for health care providers. Since less nurses will be necessary because tasks are picked up by friends and family (Respondent [1]). They can use GameBus to organize social care and counter social exclusion to minimize the related costs (2:4). Also when medical (track and trace) apps are connected this would spare costs for home care organizations (6;11; 8:2). It can also give better insights in (visually)
showing the (healthy) progress of patients (8:5).

The value of data can be high, if a concrete question can be answered using it (4:3). However, the real value requires that researchers are able to obtain the data itself and do exactly what they want with it (4:5). For insurers and employers data about BRAVO related healthy activities are interesting (8:23). Statistical companies can compare regions within countries or even among Europe (9:14) but also a company such as TI can compare different regions within Italy and use this to set different prices, marketing expenditure or promotions (9:15).

Individual users might see value in premium because of their laziness, people want to do all stuff with one app (6:13) or do not want to do chores such as manual synchronization (Respondent [1]). Curiosity is also an important factor, people want to know more extensive details about their own behavior (6:13; Respondent [1]).

6.4 Revenue

Several types of revenue models were discussed during the interviews, some have a double meaning such as reverse-utility and advertisement.

6.4.1 Licensing

Volume licensing where a higher discount is given if more subscriptions are bought upgrades the offer. People will buy a large-as-possible package, because this is more attractive (2:2). However, when combining the volume license with other payments this could be too much, for example when the company also has to pay for external sponsorship and obtaining data analytics (6:16). This could be countered by making the subscription more expensive, and giving the data or sponsorship option away 'for free' (6:17).

It could be an obstacle for companies to buy a large volume since they do not know for sure how many users will actually use it. However, negotiations by an account or sales manager could handle these issues (1:4). Using reverse-utility or letting the subscription be partly paid by the customer to reduce costs are options to mitigate this risk.

Licensing has an advantage that when someone pays for something, they will continue to pay (6:8) and therefore can be incorporated in existing forms of subscription such as ZuidZorg Extra (6:9).

Synergetics normally works with ticks, a utility based way of invoicing the data use. However for games and GameBus in this case subscription is a better choice, where the tick fees are taken care by a (high enough) subscription fee (2:1).

6.4.2 Reverse utility

Reverse-utility is used in two different fashions in the interviews. One is connected to the commitment BM, where people earn money when they use GameBus and can lose money if they don't. The other is a discount given to corporations when within their volume license people are actually using GameBus.

The commitment BM uses reverse-utility where people who are very active can earn money and vice versa. GameBus takes a percentage of these transactions, the percentage taken by GameBus should be variable, since when a lot of people miss their target more money can be taken (2:13).
An important factor is that a company keeps promoting, if this doesn't happen it will never survive (5:15). Also companies have the fear that clients might not use GameBus by themselves (6:4). By using reverse-utility the marketing will be in the hands of the company itself and besides the fact that they increase the useful effect of GameBus they earn a discount. Stakeholders agree that this is a very interesting idea and will trigger companies to put effort and FTEs in stimulating their users to become active. These FTEs can be earned back (in part) by the discount (5:17). GameBus can even be given for free in the beginning to active users (Respondent [1]) and these users will bring in new clients who will have to pay (for premium) in a B2C setting (6:10).

6.4.3 Advertising

Advertisement is also used in two ways. Most of the time it discusses the sponsors companies can become by introducing challenges. However sometimes this term is used regarding the advertisement of GameBus itself.

Sponsorship is some form of advertisement, it is considered more approachable and concrete than the Corporate customer model and therefore more feasible (7:5). It can be used at big events such as the introduction days, experience days or festivities to reach a big audience (7:9).

Companies (such as TI) are interested in this kind of advertisement to advertise themselves and increase their reputation as a company caring about user's health (8:19; 9:10).

In the current application challenges are presented at random, however it might be more meaningful when users can identify what kind of challenges they want from what kind of sponsors. This way challenges can be targeted at the right users (2:11 & 2:12).

Advertising GameBus itself is also important. This can be done by classic advertisement to let people know GameBus, but also to trigger them to make challenges (1:21).

6.4.4 Selling data

First of all: it is important that data is handled securely and that the user knows this. Both in The Netherlands as in Italy privacy is very important and it is important to know who controls the data and who can see what (5:1; 9:12).

Corporate customers who make a challenge can only see the leader-boards. If corporations want specific activities to be measured, they can create a corresponding challenge (1:15). However obtaining deeper analytics will cost effort by Synergetics and therefore costs extra.

Also consent should be received from the users, this user should be triggered to give their consent and there should be a reward in doing so. They could be getting paid in a marketplace setting or getting a reward from the company. However, if the company already pays for the analytics the do not want to pay for the data as well (Respondent [6]). Also, employees cannot give automatic consent when their employer is paying for the subscription since the responsibility and power of a company does not reach far enough to track employees outside of work (5:31).

What kind of data is useful is different for every research question (4:2) and it has to be investigated every time if GameBus data is useful therefore in the beginning companies should be given enough free access to the data without having to make a cost-benefit analysis to get a feeling about the data (9:18). After a while this could be downgraded and the
companies should pay for the valuable data. Companies will at that point (again) evaluate if this is worth the money (4:10). A lot of medical data is available for free since it is collected by public funds.

According to the interviews allocated budget is often not available (4:6; 9:16), but when the value is evident money will be available (4:7) for example from other departments such as the marketing department (9:15).

Data is stored at Synergetics, according to their view data doesn't have to be present at the company buying the data, just the analytics (2:14) however larger companies such as Apple, Google or knowledge institutes have extensive techniques with complex algorithms or large numbers and may need the data themselves (4:4). For a company such as TI it is important that Synergetics is very good at data mining, data fusion etc. (9:13).

Also a large number is needed to make this data useful (9:11)

### 6.4.5 Free trial (Freemium)

Getting (a lot of) users is essential in the first phase (8:12). To do so free access is necessary. Free access to the game or GameBus is a must nowadays, to get a feeling about the game (9:18).

The tick fees that are normally used by Synergetics cannot be used in Freemium, however these costs are being made so there should be income from other sources to pay for the free users. Synergetics thinks these costs will not be very high since the app runs within an ecosystem (Respondent [2]).

But these free users are not only a costs, they also have benefits. For example they make cool challenges which can be re-used (1:20) and they have a network effect with word of mouth (1:18). The free users will act as ambassadors attracting more free users, of which a (small) percentage will convert to premium users. These premium users will again be ambassadors for the premium version (6:12).

Also the amount of free users will be many times higher than premium users, this will help with the total user base which is necessary. For example attracting new game suppliers (1:19).

If free users already use a premium version of a different app connected to GameBus (f.e. Strava or Runkeeper) they would want to continue upgrading the single apps, looking at GameBus as an additional component of those apps (10:1). However this depends on the specific feature added and the difference between the price of full premium.

### 6.5 Co-occurrence

A total of 204 quotations were marked in the interview documents. Some of these quotations received multiple codes due to overlapping interests, this is called co-occurrence. However, this overlap is too little to be troublesome. The C-coefficients all have normal values which indicates that no codes have too much similarities (Muhr, 2005). Table 10 shows the co-occurrence between the three big code clusters. Co-occurrence between all codes is shown in Appendix H.
7. Quantitative models

7.1 Freemium Vensim

For the freemium business model, as explained in the theory a lot of variables come into play as can be seen in Figure 6.

Using a modeling program Vensim a model has been built to simulate several scenarios, the full model can be seen in Appendix Q. The time step is set to one week with a run time of 4 years (208 weeks). This time is chosen for it is not too short to recoup your investments early on, however it is not too far into the future that the effects of variables will be to unsure.

The adoption of new users is shown in Figure 10.

Some of these variables are changed in the different scenarios, these will be explained here. All variables and their formulas will be stated in Table 25.

The adoption rate of GameBus is constructed via two ways: Marketing and Word of Mouth (WOM). This is done with the Bass Diffusion Model. This model is frequently used to forecast adoptions of new products (Boswijk & Franses, 2005).

First the marketing expenditure will be discussed. Since marketing is especially important in
the first phase of product adoption, and less so in further phases (Sterman, 2000), the
distribution of marketing expenses could be increased for the first years, and lowered for the
later years. It is also relevant to see whether high or low marketing expenditure throughout
the four years is better.

Furthermore there is a variable that indicates the level of popularity of the GameBus app.
This has effect on the quit percentage (used in Figure 10 & Figure 11) and the adoption and
upgrading percentage (respectively Figure 10 & Figure 11). This value has a range from 1 to
10 where at 1 hardly anyone will join and at 10 almost everybody will use GameBus.
However we assume relevant outcome is between 4.5 and 6.5 with an average of a 5.5. To
test the impact of this fictional number we also run the tests with 4.5 and 6.5.

A third variable we will test is the yearly fee, which has an effect on the (weekly)
subscription pricing. The base price is set at 10 euros per person per year. However this might
not be the ideal number. If the price drops, more free users will subscribe but will earn less
per person. If the price rises, the opposite occurs.
Results

Figure 12: Profit calculation
<table>
<thead>
<tr>
<th>Runs</th>
<th>Marketing expenditure high</th>
<th>Marketing expenditure low</th>
<th>Marketing expenditure distributed</th>
<th>Popularity level up</th>
<th>Popularity level down</th>
<th>Price up</th>
<th>Price down</th>
<th>Best practice</th>
<th>1st year</th>
<th>2nd year</th>
<th>3rd year</th>
<th>4th year</th>
<th>Popularity</th>
<th>Yearly fee</th>
<th>Free users</th>
<th>Paying subscribers</th>
<th>Profit</th>
</tr>
</thead>
</table>
| 1. Basic             | € 3.00 0 0                 | € 3.00 0 0               | € 3.00 0 0                       | € 3.00 0 0          | 5,5                   | 10                    | 5.388.010             | 529.196               | € 225.82 7-
| 2. Marketing expenditure high | € 5.00 0 0                 | € 5.00 0 0               | € 5.00 0 0                       | € 5.00 0 0          | 5,5                   | 10                    | 5.572.800             | 559.740               | € 440.24 5-
| 3. Marketing expenditure low | € 1.00 0 0                 | € 1.00 0 0               | € 1.00 0 0                       | € 1.00 0 0          | 5,5                   | 10                    | 4.912.030             | 457.135               | € 219.42 3-
| 4. Marketing expenditure distributed | € 7.00 0 0                 | € 4.00 0 0               | € 1 / 0                          | € 1 / 0             | 5,5                   | 10                    | 4.416.980             | 488.439               | € 317.10 2-
| 5. Popularity level up | € 3.00 0 0                 | € 3.00 0 0               | € 3.00 0 0                       | € 3.00 0 0          | 6,5                   | 10                    | 6.856.850             | 923.555               | € 3.058.8 50-
| 6. Popularity level down | € 3.00 0 0                 | € 3.00 0 0               | € 3.00 0 0                       | € 3.00 0 0          | 4,5                   | 10                    | 3.507.090             | 253.112               | € 1.878.2 40-
| 7. Price up          | € 3.00 0 0                 | € 3.00 0 0               | € 3.00 0 0                       | € 3.00 0 0          | 5,5                   | 15                    | 5.515.130             | 324.915               | € 883.51 6-
| 8. Price down        | € 3.00 0 0                 | € 3.00 0 0               | € 3.00 0 0                       | € 3.00 0 0          | 5,5                   | 5                     | 4.981.610             | 1.180.510             | € 715.17 9-
| 9. Best practice     | € 7.00 0 0                 | € 4.00 0 0               | € 1 / 0                          | € 1 / 0             | 5,5                   | 5                     | 4.128.730             | 1.091.840             | € 1.254.4 3-

Table 11: Compared runs

The table above gives an overview of the different runs with changing the variables mentioned before (i.e. Marketing expenditure, popularity level and price). At the end the best choice for both marketing expenditure and price is chosen and again presented with the number of free users, paying subscribers and profit. A graph representing the profit growth is shown in Graph 5, appendix I.
### 7.2 Corporate customer decision support

Besides the model for the freemium BM, a tool has been designed to help give insight in the different possibilities with respect to the plans corporate customers can choose. An example is shown in Table 12.

**Table 12: Decision support**

<table>
<thead>
<tr>
<th>Fill in the red area's</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>How many users can join per subscription?</td>
<td>5</td>
</tr>
<tr>
<td>For how many clients do you want to buy GameBus?</td>
<td>750</td>
</tr>
<tr>
<td>This will give you a volume discount of:</td>
<td>12%</td>
</tr>
</tbody>
</table>

Normally this would cost per subscription: **€ 20,00**
Which totals to: **€ 15,000,00**
However with your volume you will pay per subscription: **€ 17,60**

In total you should pay **€ 13,200**

**However there are options to reduce this:**

<table>
<thead>
<tr>
<th>Share costs with your clients</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage paid by company</td>
<td>100.00%</td>
</tr>
<tr>
<td>Percentage paid by clients</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

Clients pay **€ 0**
This will cost the company **€ 13200,00**

<table>
<thead>
<tr>
<th>Offer Reverse-utility package</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverse-utility percentage</td>
<td></td>
</tr>
</tbody>
</table>
% 10,00% |
| Percentage of users active | 75,00% |
| Total discount percentage | 7.50% |

Clients profit from reverse-utility discount? **Yes**
Company will pay Synergetics **€ 12,210,00**
This will give a reverse utility discount of: **€ 990,00**

Total saved: **€ 2,790,00**

Five areas are marked red. These are supposed to be filled in, making a personalized plan. The first two areas are regarding how many users the employee can share the code with and how many employees are participating. In this example a regular sized team size is chosen (i.e. 5), and the company wants to roll out GameBus for 750 of their employees. The
company pays for this, since they want their employees to participate. There is an option that you let clients (or employees) pay a part of GameBus. For example if you offer it as part of a package, where you will not charge the client in full for GameBus but both parties pay a percentage.

The following 2 red areas are based around the reverse-utility deal as discussed before. The discount percentage should be filled in, ranging from 0 (there is no reverse-utility deal) to 100% (all active users are for free). Furthermore the (estimated) amount of active users should be filled in.

Finally there is the option to let clients profit from the reverse-utility or not (if they pay (in part) for GameBus). This way the company can build up even more discount or even make a profit. However normally clients should also profit from this deal.

Eventually the amount paid to Synergetics by the company is given (in this case €12.210), the discount they received from reverse-utility (7.5% → €990) and the total amount saved with both the volume discount, paying clients and/or reverse-utility (whichever may apply): €2.790.

Some information is given besides this, shown in Table 13.

<table>
<thead>
<tr>
<th>You can upgrade to</th>
<th>7 users per subscription, for only</th>
<th>€ 0,88 extra per subscription!</th>
</tr>
</thead>
<tbody>
<tr>
<td>That's</td>
<td>2 users per subscription more for</td>
<td>€ 0,44 per extra user!</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>You can upgrade to serve</th>
<th>1000 clients, for only</th>
<th>€ 2.590 total!</th>
</tr>
</thead>
<tbody>
<tr>
<td>That's</td>
<td>250 clients more for</td>
<td>€ 10,36 per user!</td>
</tr>
</tbody>
</table>

Table 13: Additional information decision support

To persuade companies to upgrade the first two red areas (team size and number of subscriptions) it is made attractive to buy GameBus for more team members and for a higher number of clients/employees. The graphs can be seen in Appendix J & K.

It is even possible, if someone is close to the upgraded number, it is more profitable to upgrade to a higher plan, if this is the case it is also identified. For example when someone want 6 users for 980 clients:

Upgrading to 7 users per subscription will save you: € 2,64 per subscription!

<table>
<thead>
<tr>
<th>If you upgrade to serve</th>
<th>1000 clients, you pay</th>
<th>€ 1.385,28 less!</th>
</tr>
</thead>
</table>

Table 14: Information when upgrading is cheaper

This information can also be used as input for personalized billing, if it can be maintained up to date.
8. Validation of quantitative models

In the following two paragraphs the feedback gained from exploring the two quantitative models with stakeholders is discussed.

8.1 Freemium Vensim model

This feedback was gained with the use of the CEO of Synergetics.

9.1.1 Market

The number of users who uses GameBus after four years may be too high. Comparing with a popular app 'Happening' similar to GameBus in the way that people make groups and engage each other in playing got 100.000 downloads in The Netherlands, of the roughly 10.000.000 smart phone users (1%). However this was achieved in less than a few months, so combining the Dutch and Italian markets, the increasing number of smart phone users and that the run time was four years with constant increasing numbers of users this is achievable.

9.1.2 Pricing and costs

The height of marketing expenses is too high. This should be low and most of the users should come from WOM.

The effect of the pricing is also questionable. Since there is most likely a large group who will not pay whatsoever (the penny gap), a group that will pay if the price is low and a group that does not really care if he spends five euros more or less.

With an annual cost of 5 euros the percentage of premium users is roughly 20%, whereas with 10 euros leads to roughly 9-10% and 15 euros 5%. This drop in premium membership is perceived to steep, it will drop but a decent conversion rate should still be maintainable.

The conversion of 20% may be considered high, however popular platforms with a much higher price are able to do so too (Spotify: 20% at €120/y, Strava: (estimated) 16% at €60/y).

Also the price of 5 euros per user is not profitable since, especially in the beginning, infrastructure (bandwidth etc.) and management costs (engineers) are relatively high. Engineers costs roughly €80.000 - €90.000 annually per FTE. The costs of these engineers are significantly higher than the infrastructure costs.

The number of engineers is difficult to determine, since GameBus will run in an ecosystem with multiple applications. However in this team roughly ten people will work, more if the ecosystem grows, therefore between 0.5 and 5 FTE is a decent number. The engineers working on GameBus are not just maintaining up-time but also working in a support function for companies. The engineers can help them create challenges and with personal branding.

0.5 FTE is the minimal time spend by an engineer added with the infrastructure costs this will be €50.000 annual costs in the beginning. With a price of 5 euros 10000 paying members are required, such a number seems hard to reach. Therefore the price per subscription should probably be increased. Looking at the annual price that is asked by the benchmark services €50 per year seems reasonable, considering that this will serve 5 users at €10 per person. This will require 5000 premium users, but only 1000 persons willing to pay €50 for their family.
Overall the freemium model will lead to initial losses, but these can be recouped in a later stage due to more premium users and lower relative costs per user as well as additional income from other business models.

8.2 Corporate customer decision support

In this validation ZuidZorg will be taken as a case in what way they would like to invest in GameBus.

9.2.1 Value

When comparing the value of GameBus with respect to image building and operational cost savings, the core value GameBus can offer to ZuidZorg is image building. ZuidZorg wants to position itself as a front runner in the home care market and they see it as important to apply new technologies. However due to cutbacks from the government (40% on home care) the innovation workplace is under constant pressure since they are viewed by many as an ‘extra’, since it is not primary care. GameBus will face this as well when acting in the health care market. However, the Innovation workplace still exists for a reason, where other departments have been cut significantly. They look for solutions within innovation that, despite cuts, the quality of care can be improved and the need from a client's perspective is fulfilled. GameBus can offer such an improvement in care. However real operational cost savings are expected less from ZuidZorg since their employees deliver physical care, so their goal is always to perform jobs such as washing, showering and dressing. Besides the nurses can place IVs, medicate, perform wound care etc. Activities such as help with washing and getting dressed are tasks that can possibly be taken over by family members or friends and therefore able to be addressed by a clever challenge using GameBus. Experience must make clear whether this can actually be achieved. It is questionable if family members who are already able and willing to do so are not already perform such tasks and if the ones that were previously unable and/or unwilling will change their attitude. The more technical jobs should remain the job of a certified nurse. Social support such as taking the client for a walk or social interaction is not handled by ZuidZorg but are organized by the municipality through the WMO and are often performed by volunteer organizations. In these sector bigger savings might occur where social isolation is prevented by the municipalities, possibly in collaboration with insurers.

9.2.2 Market size

ZuidZorg has roughly 3000 employees (± 1500 FTE) and 2000 clients. They expect that half of these can be triggered to use GameBus which lead to 1500 employees and 1000 clients. However, since GameBus has not proven itself yet they will not start out with this whole market. They expect to do the roll-out step by step, increasing the amount of users that will receive a license per step. In the first phase only about 20 early adopting families should participate. If this is a success more can follow, with a second group with roughly 100 more participants. It is also suggested that instead of the separate choosing of numbers of users per subscription and number of subscriptions this is combined to just the number of licenses. This will have as effect that there is no profit in choosing more users per subscription. This will lead to a total number of licenses of 500. Within one or two years this can be upgraded to the whole market size, this depends on how popular the app will turn out to be.
9.2.3 Pricing

ZuidZorg expects in the early phases that there will be no costs involved to purchase GameBus. The pilot with 20 families will be in corporation with ZuidZorg where feedback is delivered in return. After this test when GameBus is more mature ZuidZorg is willing to pay a normal price for GameBus, to roll out to their employees.

The volume discount should increase more rapidly. A highest tier with over 5000 users is too much, there are only a few companies who are willing to buy in such bulk and if they are they are probably already convinced of GameBus and buy such quantities whatsoever. Also increasing the percentage with 5-10% each step is too little, due to it will not make a huge difference cost-wise. A new volume license graph is shown in Appendix J.

GameBus will be paid from the budget of the Innovation Workplace. When 500 licenses are given out this can be distributed to the likes of ZuidZorg, e.g. 100 families of 5 or 125 families of 4. With a price per license of €10 and the volume discount at 25% this will cost ZuidZorg 3750. With a reverse-utility discount of 50% and 250 (50%) active users this drops to €2812.50. This price seems reasonable to ZuidZorg.
9. Business models

SQ 4 will be answered in the following two chapters. First the qualitative concepts of BMs are discussed in this chapter, and in chapter 7 some quantitative examples are presented which are then evaluated in chapter 8.

Looking at the theory, several BMs are available. As seen in paragraph 2.1.2 many revenue models are used by competitors. Combining the suggestions made by the initiators of the project (i.e. Van Gorp et al.), literature, theory and after speaking with several stakeholders the following business models are constructed:

First a direct B2B using a volume license model is described to sell GameBus to (large) companies. Secondly GameBus will be available for download to individual users so a B2C approach is described using a freemium model. For companies sponsoring a challenge is available, which is again a B2B model. After this as a profitable in-app functionality is described with a reverse-utility brokerage model, this will be B2C. Finally a BM regarding the produced (big) data is presented, this will again be B2B and will have a subscription model, albeit in a slightly different form.

With every BM several aspects are discussed: First the target customer and their value are explained. After this the revenue model is specified. Then follows a SWOT analysis about the BM. Finally a graphical overview of the model is presented in the BASE/X framework.

9.1 Corporate customer (B2B)

The first model we discuss will be named the Corporate customer model. This model focuses on the Business-to-Business side of the market.

Target customer & value

The Corporate customer model will aim at large companies with many employees. By volume licensing GameBus to companies with a large client base, large revenues can be gained. There is also the possibility for companies to use GameBus for their clients, however companies indicated that they prefer to use it internally. Besides that it is said that they expect their clients to pay for GameBus themselves, so in that way they could be used as a sales or marketing function.

Since GameBus stimulates healthy behavior, they see a positive influence for their employees. Decreasing their costs of sick-days and overall productivity. Besides this GameBus also functions as a team building tool. The Italian company Telecom Italia has many programs to increase the bonds within a team, and to welcome new employees into their company and their team. A considerable amount of their training budget is spend on this type of events and GameBus can facilitate this. Also they can become a more attractive employer to future employees by introducing GameBus.

These corporate customers will most likely also become sponsors, which will be described in paragraph 9.3. So these companies will build challenges to keep track of their employees. Possibly an insurer can also become a sales function by adding GameBus to their package if their costs will drop because of healthier clients. This can either be a discount to the corporate insurance, paying partly or in full for the introduction of GameBus, guiding companies into using GameBus or rewarding care organizations for stimulating the use of GameBus. This is
only done for big companies. However, if this is the case GameBus must be proven to reduce
costs for the insurer, which is hard. The companies may come to the insurer with the idea of
introducing GameBus though.

Focusing on companies with large numbers of employees the following numbers are
important:

<table>
<thead>
<tr>
<th>Country</th>
<th>50-250 employees</th>
<th>250+ employees</th>
<th>50+ employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Netherlands</td>
<td>10,700</td>
<td>2,860</td>
<td>13,560</td>
</tr>
<tr>
<td>50-250 employees</td>
<td>27,000</td>
<td>3,900</td>
<td>30,900</td>
</tr>
<tr>
<td>250+ employees</td>
<td>37,700</td>
<td>6,760</td>
<td>44,460</td>
</tr>
<tr>
<td>Total</td>
<td>37,700</td>
<td>6,760</td>
<td>44,460</td>
</tr>
</tbody>
</table>

A total of 11,550,000 employees can be targeted when focusing on the employees, with a
total of 44,460 companies to target.

**Revenue model**

Due to the fact that these companies have a clear vision of how many employees they want to
contract with GameBus, they will know in what discount range they will fall. An example of
volume discount is shown in Appendix J. The family of these employees are also included in
this package, this is limited to a certain amount. This can be upgraded by buying larger (more
expensive) plans with more users per subscription.

Using a formula we can calculate the precise price for a specific plan:

\[
\text{Formula 1: Corporate pricing} \\
\text{Volume}\times\text{Discount}\times\text{Price of (Number of users per subscription)} \\
\]

Another version will be that just licenses are sold, and the company can hand out more than
one license per employee to use for family members. The formula changes slightly:

\[
\text{Formula 2: Corporate pricing 2.0} \\
\text{Licenses}\times\text{Discount}\times\text{Price per license} \\
\]

An example of the pricing scheme of users per subscription can be seen in Appendix K & L.

**Reverse-utility**

Feedback from ZuidZorg suggested organizations might not be tempted to spend a large
amount money on such a new application. For GameBus, especially in the start-up phase,
building a user base is equally and maybe even more important than generating revenue. A

\[5 \quad \text{Data is retrieved from CBS (Statline) at 06-08-2015} \]
\[6 \quad \text{Data is retrieved from Istat & Eurostat at 06-08-2015} \]
reverse-utility based model can be used to give the opportunity to companies like ZuidZorg to receive a discount, as long as a lot of their clients will actively use the application. This reverse-utility will work as follows: ZuidZorg gives an indication of the amount of clients they will engage with GameBus. They will receive for these clients promotional premium codes to hand out. They will pay the normal amount for these accounts. However, for each active user (i.e. weekly activity) they receive a discount. For example with 1000 clients or employees that receive GameBus, ZuidZorg might get 60% to become an active user due to internal marketing and promotions. Over these 60% they receive a 50% discount. This means that besides their volume discount they will also receive an extra 30% 'reverse-utility' discount.

The effect of this model is that either the (active) user base is expanded, or extra revenue is generated. This is basically a win-win. On the side of the corporate customer, they have everything to gain by achieving as much active users as possible, since this saves them money and they have the benefits GameBus provides. These corporate customers will therefore put effort into making their clients active, f.e. by providing interesting challenges.

Depending on whether the focus lies on more users or more revenue this option could be withheld from companies who want to buy GameBus whatsoever. Since using this reverse-utility model the amount of active users will probably increase, meaning a higher user base.

This kind of offer is preferable over a free trial, since no effort is requested from the company to actively engage their subscribers and therefore diminishing the value GameBus may offer.

In chapter 7 a decision support overview is presented to give better insights in how different choices affect the pricing.
## SWOT Analysis

<table>
<thead>
<tr>
<th>Internal origin</th>
<th>Helpful effects</th>
<th>Harmful effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Consistent flow of revenue during the subscription period</td>
<td></td>
<td>• Price should be high enough that server costs and management costs are covered</td>
</tr>
<tr>
<td>• Corporations can be rewarded for engaging employees using reverse-utility</td>
<td></td>
<td>• An account manager should actively persuade companies to buy GameBus</td>
</tr>
<tr>
<td>• Subscription doesn’t require metered usage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If the platform isn’t used still generates revenue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Companies are open to use GameBus for their employees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Companies buy premium versions, therefore all users are profitable</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>External origin</th>
<th>Helpful effects</th>
<th>Harmful effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Opportunities:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• There is a market gap for an app that encompasses physical, cognitive and social aspects</td>
<td></td>
<td>• Other companies emerge with a similar service and similar subscription</td>
</tr>
<tr>
<td>• Customers tend to stick to what they have (Gourville, 2006) so once a client has a subscription they will remain a client</td>
<td></td>
<td>• Employees who are not willing to do these healthy activities might not be persuaded by their peers and/or GameBus</td>
</tr>
<tr>
<td>• Companies may sell GameBus to their clients if they are convinced it is useful for their clients or it complements their product</td>
<td></td>
<td>• Companies may only buy GameBus when it is proven that it will actually reduces costs</td>
</tr>
<tr>
<td>• Insurers may recommend GameBus in corporate insurances if it reduces their costs</td>
<td></td>
<td>• It is not hard proven that certain types of prevention really reduce the costs</td>
</tr>
<tr>
<td>• The market potential is big</td>
<td></td>
<td>• Companies might already have certain health programs in place, convincing that GameBus is better might be hard</td>
</tr>
</tbody>
</table>

*Table 15: SWOT analysis Corporate customer*
The corporate model is represented in the BASE/X BM radar below.

**Figure 13: GameBus Corporate customer Business Model Radar**
9.2 Consumer market (B2C)

GameBus will also be released for individual downloads in the Google's Play Store, Apple's App Store and other mobile stores.

**Target customer & value**

Our first target group for the consumer market will be families and friend groups. In paragraph 2.2.1 we've seen several B2C age groups. Of these the Young adults, Adults or Middle-aged group are the most interesting, as shown in Table 16.

<table>
<thead>
<tr>
<th>Age group</th>
<th>Financial</th>
<th>Technology</th>
<th>Influence</th>
<th>Health/Tracking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young adults</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Adults</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Middle-aged</td>
<td>++</td>
<td>-</td>
<td>+</td>
<td>++</td>
</tr>
</tbody>
</table>

*Table 16: Target customers Freemium B2C*

Young adults have a high market share in wearable tech and are generally interested in new technology (Ledger & McCaffrey, 2014). Since they often have work, they have the financial means too. Also they have the willingness to influence their friends to join them in their behavior.

Adults are the best target group, these often have a family and can influence both their children as their parents to live healthier. They have the financial means, but are slightly less technology focused.

Middle-aged (wo)men don't have much with technology but however they turn out to be the ones who track themselves the most, often due to declining health of their own (Fox & Duggan, 2013).

The value might slightly differ but the overall problem that GameBus will solve is connecting and motivating people you like with different interests to an overall healthy lifestyle.

All smart phone users in The Netherlands and Italy are a potential customer. In The Netherlands these are roughly 9 million people, and in Italy 26 million (Mobile Planet, 2015). This totals to 35 million smart phone users able to download GameBus.

**Revenue model**

The app market for B2C nowadays is often freemium, as theory shows this is the way to earn revenue these days. Zuora, market leader in the subscription economy, constructed 10 questions to check if the freemium model is right for your product (Learly, 2014b):

1. *Does your service have viral adoption potential?*
   
   **Yes**, people will invite friends and family to join their teams

2. *Do you have a low cost-to-serve service?*
   
   **Probably**, the exact figures from Synergetics are not in yet

3. *Does your service have a huge potential market?*
   
   **Yes**, people from all age groups, socio-economic levels and interests are a potential user
4. Do you have a clear and compelling migration path for your users?
   **Not yet,** this has to be developed in 2016
5. Does the value of your service increase the longer that people use it?
   **Yes,** due to more insights in your lifestyle.
6. Can you monetize even free subscribers?
   **Yes,** since companies can sponsor challenges for all (also free) users as a form of advertisement
7. Do you have the capacity to prevent people from gaming your system?
   **Working on it,** manually yes.
8. Does your service get stronger when more people use it?
   **Yes,** the more people use it the more challenges are made by both users and companies and the more data is generated
9. Is there potential for two-sided monetization of your service?
   **Yes,** both the B2C as B2B market is targeted (through sponsorship)
10. Do you have the infrastructure to serve a mass audience?
    **Yes,** Synergetics is migrating to a KPN server that should be able to handle mass audience.

Also several interviewees indicated that this is a useful way to gain users, since a large user base is important.

I. Free users; These users only can use the most popular apps available. When more apps and features become compatible with GameBus some will not be available in the free version. Also free users get targeted by sponsors on a more intrusive fashion than premium users. Another limitation is that free users can only join a limited amount of groups. However they create value through their game history data and playing games but also possibly creation of challenges and giving support on the forums.

II. Premium users; These users pay a monthly or yearly subscription fee and get unlimited access to the GameBus features with the possibility to turn off messages from sponsors.

A third option was developed from literature and first interviews. In this option the person would be able to upgrade GameBus such that some of the applications that are blocked due to the free version are available. However most interviewees regarded the upgrading option not feasible due to the fact that most people who want to spend money on such an app must be convinced to upgrade to premium.

To give the user a preview of all the possibilities GameBus premium can be used 30 days for free. Also, long time free users get this offer renewed to trigger them again. This offer GameBus provides can thus be qualified as the hybrid free trial, as defined by Cheng et al. (2015).

In 2016 all features will still be available for free, no premium will be installed yet, to gain a larger user base. Sponsored challenges will therefore be pushed to everyone. However when premium is implemented, f.e. in 2017, these existing users must be kept as users. Therefore the existing features they enjoyed must be kept, upgrading would however stop the sponsored challenges.
All features will be available to the customer and their family, as with B2B model this can be increased by upgrading to a higher plan (like the three plans of Netflix, see Table 20). All users within this group enjoy the same functionalities, either free or full (premium) functionalities.

An example is shown in Graph 9 (with costs/user in Graph 11). Note that there are four points where the costs per user lowers, this is done to make it more interesting to upgrade to a slightly higher plan (which you might not necessarily need). These points are, at this point, chosen at random and given the names “You and a friend”, “Your home”, “Three generations” and “Sports team” for respectively 2, 4, 7 and 15 users.

Users indicated that they ideally see a group size of five team members, since this is the right amount to involve their immediate friends or family but not too large that there will be social loafing. Social loafing is the tendency for individuals to expend less effort when working collectively than when working individually (Karau & Williams, 1993).

All users, both free and paying, are profitable in other ways:
I. They will promote GameBus to friends and family to expand their gaming experience, increasing the (potentially paying) user base
II. The challenges from the sponsorship model as described in are more attractive when the user base is greater.
III. 'Free' users might generate interesting content for other members.
IV. A larger user base will trigger more game suppliers to connect to GameBus, making the whole experience better.
V. Users can handle the support of GameBus, answering questions and helping each other on forums.
## SWOT Analysis

<table>
<thead>
<tr>
<th>Helpful effects</th>
<th>Harmful effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths:</strong></td>
<td><strong>Weaknesses:</strong></td>
</tr>
<tr>
<td>• Barrier of entry is very low, so customer sign-ups are quick and easy (Zuora, 2014)</td>
<td>• Free trial in the beginning may come at a point in time where they will not achieve full benefit from it</td>
</tr>
<tr>
<td>• Mouth-to-mouth/viral advertisements is easy because everyone can join</td>
<td>• Freemium often has a very low conversion rate (Zuora, 2014)</td>
</tr>
<tr>
<td>• A large client base is built fast, empowering GameBus's features</td>
<td>• If the migration path to premium is not 100% seamless people will not upgrade (Zuora Content Team, 2014)</td>
</tr>
<tr>
<td></td>
<td>• 'hacking'/ 'cheating' the system should be prevented (Learly, 2014b)</td>
</tr>
<tr>
<td></td>
<td>• There is a penny gap, where people will never buy a premium because they do not want to spend money, no matter how cheap it is</td>
</tr>
<tr>
<td></td>
<td>• Currently there is no premium version</td>
</tr>
<tr>
<td><strong>Opportunities:</strong></td>
<td><strong>Threats:</strong></td>
</tr>
<tr>
<td>• There is a market gap for an app that encompasses physical, cognitive and social aspects</td>
<td>• Customers tend to stick to what they have (Gourville, 2006) which keeps them from upgrading</td>
</tr>
<tr>
<td>• GameBus is in the race for further funding from the EU in 2016 which makes adding features easy</td>
<td>• Conversion rates are unpredictable</td>
</tr>
<tr>
<td>• If GameBus becomes popular devices want to become GameBus-ready, such as happened with Netflix (Duncan, 2011; Frankel, 2014)</td>
<td>• Subscription pricing should be iterated over time and not be fixed, this requires monitoring</td>
</tr>
<tr>
<td>• Some insurances might have a preventive health package or will create one in the future</td>
<td>• Financial stimulus/prize could be too low for most people to start exercising</td>
</tr>
<tr>
<td>• A lot of users will trigger game suppliers to connect with GameBus</td>
<td>• If GameBus reaches a mass audience it might become 'uncool' and therefore not attractive to teenagers (Schellevis, 2013; Spanjar, 2011)</td>
</tr>
</tbody>
</table>

*Table 17: SWOT analysis Freemium*
The BASE/X framework instructs to construct a radar for each individual customer, i.e. free users and premium users. However all interviewees found the combined radar clearer and more understandable with respect to the separate views. Therefore these are combined.

Figure 14: GameBus B2C Freemium Business Model Radar
9.3 Sponsorship model (B2B)

As an addition to the consumer market model there is an advertisement/rewards-based model. Sponsors may set up a challenge, or multiple challenges for users of GameBus to participate in.

Also, the creators of the challenges (sponsor or corporate customers) can see the leaderboards of their challenge, especially for corporate customers who want to track their employee's progress this is interesting.

When advertisements are in place, more free users will be eager to upgrade to premium.

**Target customer & value**

All companies who want to advertise their brand is a potential target of this business model. However, some companies might have moral issues with the competitive nature of the challenges. Insurers for example cannot favor one individual above another. However, there are companies who are especially likely to like these kind of challenges.

Companies with a competitive, sporty nature such as Adidas, Nike or Gazelle would be ideal targets for these kind of challenges. In The Netherlands an example of a target group would be the Brainport region with its companies where health and innovation are high priorities. The Brainport region consists of 125 companies and 10,000 researchers, developers and entrepreneurs. Their value, simply put, is advertising their brand in a healthy, innovative environment, gaining brand recognition and awareness.

Research shows that 60% of companies have a marketing budget of 3% or higher of their revenue (CMO Council, 2012). Medium (50-250 employees) enterprises have a revenue of 10-50 million euros and big companies (250+ employees) the revenue is over 50 million. Of the 37,700 medium enterprises and 6760 big companies in The Netherlands and Italy, 60% is roughly 22,600 medium and 4050 big companies. Their combined marketing budget is respectively minimally 6780 million & 6075 million (€300.000 per medium enterprises, €1.500.000 for big enterprises).

**Revenue model**

Sponsorship is some form of advertisement. This well-known form to increase the image of a company is considered more approachable and concrete than subscription models.

Companies can buying packs of credits which they can spend on different types of challenges.

With these credits they can choose for high costs, very intrusive advertising or cheaper, less intrusive challenges.

If the sponsor wants to give a push-message or an email to the GameBus players this will increase the price, also targeting specific users will cost more. As explained before, only free users will have these intrusive advertisements. Sponsors also pay more to have a more prominent place in the challenge list.

Of course it is possible to buy packs that can be used for one challenge but also larger packs for multiple challenges. It should also be possible for companies to make challenges on a utility based contract. The advertisement are still paid per ad, but instead of pre-paid credits the ads are paid monthly based on the amount and type of challenges created.
### SWOT Analysis

|          | Helpful effects                              | Harmful effects                                                                 |
|----------|----------------------------------------------|![](https://via.placeholder.com/150)
| Internal origin | **Strengths:**                             | **Weaknesses:**                                                               |
|          | • Advertisement is a well-known term for companies, it is more concrete and approachable | • 'Hacking'/cheating' the system should be prevented (Learly, 2014b)          |
|          | • Paying per ad allows creative pricing     | • Some sponsors, such as insurers, might be unwilling to participate to maintain a neutral standing, i.e. not giving the impression it favors the 'health freaks' |
|          | • No chance of over-use                     | • Challenges are presented at random, this may lead to undesired challenge presentation |
|          | • Companies can easily sponsor a single challenge without obligations |                                                                      |
| External origin | **Opportunities:**                         | **Threats**                                                                  |
|          | • More and more companies want to have a healthy and/or innovative image | • Companies may not be able to sponsor, due to keeping up an image that everyone is equal, such as insurers |
|          | • Mobile advertisement is increasing        | • If GameBus reaches a mass audience it might become 'uncool' and therefore not attractive to teenagers (Schellevis, 2013; Spanjar, 2011) missing a part of the target market for some companies |

*Table 18: SWOT analysis Freemium*
The sponsorship model is represented in the BASE/X BM radar below.

**GameBus Sponsorship Business Model Radar**

Figure 15: GameBus B2B Sponsor Business Model Radar
9.4 Commitment model (B2C)

This model rewards players who are active, whilst earning from players who are not so active. In this BM there can be four types of commitments a person can make:

1. **Commitment to yourself.**
   With this type you commit to paying a fine for not completing certain tasks. These tasks can be either self-appointed or part of an existing challenge. The revenue comes from the total pool of people who make commitments to themselves. The total amount of fines will be divided among the users who did manage to achieve their goals.

2. **Commitment within your circle.**
   This type is similar to the first commitment, however the spoils will remain within the group. This is similar to just challenges people make for their own circle with a reward for everyone who manages to achieve certain heights.

3. **Competitive commitment within a circle.**
   This type is similar to the second commitment. However, this time the users with the most points (in a specific area) will gain money, while the ones at the bottom lose money. This is also similar to normal challenges, but a different reward strategy.

4. **Competitive commitment between circles.**
   This type is similar to the third commitment. However, this time circles will compete against each other.

Of course, these options are also possible without involving money, however type 3 and 4 would be normal challenges.

**Target customer & value**

The target customer group will be split among the first two types and type 3 and 4. Commitment to yourself and within your circle can be done by all groups who have the financial means, this only excludes the children group. This group may not get permission from the parents. Also the elderly might be scared of such a feature or will not understand it, therefore they are not targeted either.

The value they receive is an extra motivation to keep up the good work, while also being able to earn some money on the side. Using the fear of losing money is a good motivator (Hume, 2013).

The second group will be fanatic sport types, such as Cross-fitters in The Netherlands, or competitive bikers, hikers or mountain climbers in Italy. This group is constantly looking to be the best or to beat their friend. With a monetary incentive this competition will become even fiercer.

The value for these customer group is that they have a leader board on a specific type of challenge and they can earn money with their usual activities.

The target group is the economically active population (age 15-65) of The Netherlands and Italy. These groups are respectively 11 and 38 million, combining to 49 million potential
users.

**Revenue model**

If users choose to play with money involved GameBus will take a small portion of the financial streams, therefore becoming a broker. GameBus earns more when users do not achieve their goals or having enough activity, making this a reverse-utility (brokerage) model. The portion GameBus will take will vary depending on the percentage of users failing their goals. If everyone achieves their goal this percentage will be 0. This way in cases 1 and 2, if everyone achieves their goal, no money will be charged to the players. For example of 50% of the users fail to achieve their goal, there will be more money to be distributed to a smaller portion of users, than when only 5% of the users fail (less money, distributed among more 'achieving' users).

Experience should show whether enough people do not finish their goals. If this is not the case, little to no revenue can be earned by the users, which will not trigger them to pledge money. Besides that, the revenue GameBus gains will be low in that case.

A formula for the revenue of GameBus might be:

\[
\text{Revenue for GameBus} = \text{Total money involved} \times \text{Percentage of not achieving users} \times \text{Number of not achieving users}
\]

*Formula 3: Revenue for GameBus*

The formula of what each individual achieving user gets will be:

\[
\text{Revenue for users} = (\text{Total money involved} - \text{GameBus revenue}) \times \text{number of achieving users} - \text{(average) money input per user}
\]

*Formula 4: Revenue for users*

A graphical representation is shown in Graph 14.

This functionality is not developed yet. As this is an extra in-app feature it will be implemented when all basic functionalities are working. Additional funding will be requested to develop this feature, making it a possibility for late 2016 or 2017.
## SWOT Analysis

<table>
<thead>
<tr>
<th></th>
<th>Helpful effects</th>
<th>Harmful effects</th>
</tr>
</thead>
</table>
| **Internal origin** | **Strengths:** • The feature makes users come back to the app.  
• The feature could persuade users to become premium members  
• The feature provides an extra revenue stream | **Weaknesses:** • Hacking the system is a high risk  
• If users complete their goals but there is no money from non-achievers they might stop  
• Users might be scared to pledge money  
• Older persons might not understand the functionality  
• Implementation might be difficult  
• 3rd and 4th type may rely too much on physical activities |
| **External origin** | **Opportunities:** • GameBus is in the race for further funding from the EU in 2016 which makes adding features easy  
• GameBus can offer a more extensive range of competitions than pact and DXG | **Threats** • Juridically money might not be a possibility in (some parts of) Europe  
• The pact app and DXG are dedicated apps for this and already have a head start (Hume, 2013)  
• Target customers are not fully investigated yet  
• Users might be disappointed in losing money, quitting GameBus as a whole |

*Table 19: SWOT analysis Commitment*
Despite the fact that there are four types of commitment possibilities, the overall BM will be presented in the same way. Since in all types there is the possibility for a user to achieve their goal (i.e. literally, or being in the top) and vice versa with not achieving their goal.

Figure 16: GameBus Commitment Business Model Radar
9.5 Data analytics model (B2B)

While user connect to GameBus, data is generated. This data is valuable for all kinds of companies. Since Synergetics stores all data gained from GameBus this data is available. However two important aspects must be considered:

1) The servers of Synergetics will have to deal with extra load when analytic queries are executed, these costs must be covered.
2) Since the data is still owned by the users who generate it, these individuals must each give consent to use the data to specific companies who want to use this data. These individuals must be triggered into giving this consent.

Target customers & value

Most of all knowledge institutions like universities will be eager to analyze these rich data set. Depending on the research questions asked, data is required, therefore it is possible that some knowledge institutions are more eager to buy in data from GameBus than others. Also knowledge institutes such as statistical organizations might be interested to compare different regions of their area such as the Dutch Centraal Bureau Statistiek (CBS) or the Italian Istituto nazionale di statistica (Istat). But if GameBus expands even the European Eurostat.

Besides these knowledge centers, regular companies could benefit from the data produced by GameBus. For example companies that sell (sports) shoes might know after how many steps or kilometers one would need new shoes. The same theory applies to biking equipment or other sports apparel. For a company such as TI, who focuses on games now, it is useful to see what kind of games are popular in what regions of Italy.

Revenue model

The first aspect is investigated in parallel with this thesis by Wei, Veenis and Staykova (2015) both investigations resulted in a subscription based model. However in contrast to Wei et al. contracts will (in general) not be personalized. But several levels of subscription will be offered.

- **Free (time-limited) trial**
  First time users can try out the data analytics for a short amount of time. After this time they get an idea of the value of the data and can identify in which level of use they will fit best.

- **Subscription levels**
  The elaborateness of the data or complexity of the analytics will increase with a more expensive plan. As can be seen in Table 20 upgrading to the third plan with Netflix does not only make the service available to four people at the same time, but also offers Ultra High Definition videos. In case of GameBus the variables could be number of users, the bandwidth usage of the analytics and perhaps the possibility to run your own style of f.e. data mining since (especially knowledge institutes) would have their own techniques that Synergetics cannot match.
<table>
<thead>
<tr>
<th>Plan</th>
<th>Number of simultaneous screens</th>
<th>Quality</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1</td>
<td>SD</td>
<td>$7.99</td>
</tr>
<tr>
<td>II</td>
<td>2</td>
<td>HD</td>
<td>$8.99</td>
</tr>
<tr>
<td>III</td>
<td>4</td>
<td>HD + Ultra HD</td>
<td>$11.99</td>
</tr>
</tbody>
</table>

*Table 20: Netflix plans & pricing*

**Consent**

The second aspect is focusing on the users of GameBus. There are several options to trigger the users to give consent of using the data.

- **Challenge**
  Companies can create a challenge where users should consent to giving them 'x amount' of data, therefore giving some sort of reward. Similar to the sponsors from the Freemium BM.

- **Marketplace**
  In a marketplace users can offer their data to companies, with supply and demand pricing. GameBus functions as a broker and will therefore collect a brokerage fee.
<table>
<thead>
<tr>
<th>Internal origin</th>
<th>Helpful effects</th>
<th>Harmful effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths:</strong></td>
<td>• Consistent flow of revenue during the subscription period</td>
<td>• Pure subscription model is not meant for sporadic access</td>
</tr>
<tr>
<td></td>
<td>• Different subscription levels to cater to customer’s needs</td>
<td>• If subscription levels are not set properly, overuse of the system could mean revenue losses</td>
</tr>
<tr>
<td></td>
<td>• Clarity for company in terms of service</td>
<td>• If it is not clear what kind of data is available, companies will not be interested</td>
</tr>
<tr>
<td></td>
<td>• Doesn’t require metered usage</td>
<td>• A large user base is required</td>
</tr>
<tr>
<td></td>
<td>• If the platform isn’t used it still generates revenue</td>
<td>• If companies should already pay for subscription for their clients or employees, they do not want to pay for the data as well</td>
</tr>
<tr>
<td></td>
<td>• Levels are easy to understand for customers</td>
<td>• If companies pay for the analytics they do not want to pay for gathering the consent as well, either by paying in a marketplace or a challenge reward</td>
</tr>
<tr>
<td></td>
<td>• Users can choose a plan that suits them best</td>
<td>• Knowledge institutions will want to run their analytics locally due to the complexity of their analytics</td>
</tr>
<tr>
<td></td>
<td>• Users are protected from privacy violation by the Synergetics design</td>
<td>• Medical data is often available for free since it is collected by public funds</td>
</tr>
<tr>
<td></td>
<td>• If many users generate data the unique combination of data will form a rich data-set</td>
<td><strong>Weaknesses:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>External origin</th>
<th>Opportunities:</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Customers tend to stick to what they have (Gourville, 2006) so if companies subscribe at Synergetics they will likely stay there</td>
<td><strong>Big Data</strong> is on the radar of a lot of companies and therefore the chance of emergence of similar services is high (Whiting, 2015b)</td>
</tr>
<tr>
<td></td>
<td>• Lots of companies want to make use of big data</td>
<td><strong>There might be companies who can analyze GameBus (Big) data better than Synergetics</strong> (Whiting, 2015a)</td>
</tr>
<tr>
<td></td>
<td>• Big Data will become even more popular than it already is</td>
<td><strong>Companies do not have budget available yet</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Companies may not know what data they could use</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Companies may not know where to get data they need</strong></td>
</tr>
</tbody>
</table>

*Table 21: SWOT analysis Data*
In this business model two separate BM radars can be presented, one for knowledge institutes and one for companies since they have different values of using GameBus data.

Figure 17: GameBus Corporate Customer Data Business Model Radar
Figure 18: GameBus Knowledge institution Data Business Model Radar
10. Discussion

10.1 Limitations

BASE/X
Using the BASE/X BM radars has some limitations. Without previously explaining the specific business model the radar does not explain what the BM is about. This means that on its own the BASE/X BM radars are not useful. Also one respondent mentioned that some terms used in BASE/X BM radars have different meanings to everyone and therefore some might wrongly interpret some parts.

BMIs
I was unable to speak to someone from the municipality of Eindhoven, this is a missed opportunity since they might have had another angle to use GameBus especially concerning the WMO. Therefore not all relevant stakeholders might have been questioned.

Also most stakeholders were from The Netherlands, however most implications were checked through our Italian partners (i.e. stakeholders from Trento and TI) some parts may be more applicable in the Netherlands than in Italy.

Furthermore the GameBus app is just a start up and did not have a minimum viable product. This makes it difficult to get feedback from users of the strengths and weaknesses among individual users.

Quantitative analysis
Most values and formulas in the Vensim model are estimates. Changing these values or formulas can have a huge impact on the revenue and cost part of the model, and therefore on the profit. The adoption of GameBus follows the Bass diffusion model, however no exact data is available on what effect marketing will have on the adoption of GameBus and how WOM affects the adoption. The model is purely used to gain feedback from Synergetics.

Also, some costs or income have not been implemented. For example no sponsor income is modeled. Also the possible costs to attain a game supplier is left out. Overall this model neglects the fact that there are other BMs in play to keep it simple.

10.2 Recommendations

GameBus is able to gain market share on five different markets. However, these should not be targeted at the same time. The main focus lies on reaching the large market potential of the B2C market using freemium and getting a more steady income from companies in the B2B market.

2016
The first market that should be targeted is of individual users who can download the app in the app store. Building a large user base is the first step to take. Marketing efforts should be directed at all users to gain a big user base, however specific attention to upgrade to premium
must be paid to three types of groups: young adults, with emphasis on the new technology; adults, with emphasis on the possibility to influence their entire family and; middle-aged (wo)men, with emphasis on the health tracking aspects of GameBus. In Italy marketing should consider focusing more on the team bonding aspects of GameBus due to their 'family'-culture. Also, more emphasis on the North of Italy is recommended due to its higher economic standard. The revenue model should be freemium. Free: with limitations to app connectivity, sponsorship intrusion and limited circles; and premium with full functionality and the possibility to turn off sponsorship intrusion. A free premium trial period of one month. In the beginning there might not be a premium version ready, therefore losses are expected in this phase.

When GameBus has proven to be a useful app, it can be targeted towards larger companies with the use of an account/sales manager.

Large companies are also a main target market. In this business model the main focus lies on selling a volume license of premium memberships to a company which they can distribute to their employees. Before entering this market the app should be mature enough to be offered. This can be achieved with help from the consumer market and by doing pilot tests at companies such as ZuidZorg, these pilot tests done at corporate customers will not generate revenue though.

When the premium features are not much different than the free features, basic support must be provided to help with creating challenges and personal branding. Companies are open to buying the product for their employees. However for their clients is more troublesome, since they need to see the benefit of paying for those clients instead of the clients buying it for themselves. Brand recognition and service towards their clients are the motivations for them. Health care companies could be convinced by saving of operational costs as well. This might be more the case when the app is more popular and there is demand for this or when it is proven that using GameBus reduces costs for health care companies or insurers. Again, in Italian companies, located on the center or North of Italy, might be convinced by adding it to their team-building programs, where in The Netherlands the health of the employees might be more important.

2017

Once there are enough users and GameBus is better known, sponsors would want to advertise in GameBus. These sponsors can advertise through GameBus by making challenges and awarding players to compete in these challenges. The main target market to approach are companies with a healthy appearance who want to express themselves that way to the user base of GameBus. But it can also be targeted at event organizers like introduction weeks at universities or sporting events. The challenges are paid per ad, this can be done per ad or billed monthly on utility base.

If enough users are using GameBus their combined data can be used as an asset as well:

Synergetics can function as a big data provider to answer research questions for different types of companies: first the larger companies who span across several regions or countries might be interested in the differences between these regions. This way the can target their marketing efforts more precisely. Secondly some companies might want to have more extensive knowledge about their clients within their own region. But also knowledge institutes may use the data. Since knowledge institutes have a wide range of questions, some might be answered using data from GameBus. The way this data analytics is offered is
through Synergetics at a subscription offer. Different levels of subscription are possible that
can differ in terms of amount of data, complexity of data analytics, amount of support from
Synergetics and maybe more. To corporate users a low level subscription is offered where
they can analyze their own data. If the corporation wants more extensive analytics, a bigger
data set or support they must upgrade to a higher plan.

The commitment model is focused around an extra feature that has to be implemented in
GameBus. The target market would be more fanatic sportsmen such as cross-fitters in The
Netherlands or mountain climbers in Italy. This model lets users pledge money if they do not
achieve their goals, however when they do they can earn money. GameBus will take a
portion of the prize pool as its function of broker. The portion GameBus will take will vary
depending on the percentage of users failing their goals. If everyone achieves their goal this
percentage will be 0. To develop such a feature time and money should be spent, before this
can be done the app has to be working smoothly so other models have priority. Also, this
revenue model only works if there are enough users who miss their goal. Experience should
tell if this is the case. It is possible that this feature can be implemented before the data is rich
enough.

**Costs & revenue**

To make contact with companies an account manager is required (0.5 FTE). Besides this an
engineer is required to maintain up-time and fix bugs (0.25 FTE). One of these two should
also be able to provide support to the companies with creating challenges and personal
branding (0.25). In total this will be one FTE of roughly €80,000-90,000. Together with the
infrastructure costs a total costs is expected of €90,000 - €100,000 annually. We assume
marketing costs are neglectable in the long run due to WOM. In the beginning some
advertisement is necessary, however the costs of infrastructure will be lower to compensate
this. Also, EIT Digital helps with external exposure at the start.

We set a base price for GameBus at €10 for individuals. Companies are expected to buy
between 250 and 1000 licenses, which given them a volume discount of 25%. Therefore
companies will pay on average €7.50 per license.

The amount of users required to equal a revenue of €100,000 per year equals 10,000 premium
users. We estimate that on average a family pack of 5 users is bought, and therefore 2000
paying users are required. When looking at companies, 13,334 licenses are required. When an
average firm buys 500 licenses at €3750, this will total to 27 companies that have to buy
GameBus for their employees (or clients).

When comparing the numbers of companies to paying users, 1 company with 500 premium
users equals 75 paying users and a total of 375 active premium users. Graph 2 shows the
number of users and/or companies necessary to gain €100,000 to cover the expenses. It also
shows that the higher percentage of revenue comes via corporate customers, the higher
percentage of premium users are active. However the number of premium users from the
B2C market is just a small percentage of the total active users in this market, due to the free
option of freemium. If premium is purchased by 10% of the active user base, this will lead to
a requirement of 13,500 ~ 100,000 total users (free and premium), ranging from fully
populated by company users to fully B2C (freemium) populated.
The additional income from the other three business models, namely sponsorship, commitment and data analytics is not included since these are not main providers of income or costs.

10.3 Further research

For further research several limitations and solution points outside of the scope of this research can be handled.

- The effects of variables such as marketing expenditure on the adoption should be investigated through either experimental marketing tactics or a case study. Also, the effect of yearly fee on the upgrading rate could be investigated when users have experienced the app.

- It is useful to have an overview of what kind of data can be obtained from GameBus and for what kind of analytics this may be used. This way specific companies can be targeted with a solution for existing questions and companies looking for a specific question can find GameBus easier.

Graph 2: Number of users and companies to gain €100,000
• Research can be done into what makes some applications a short hype, where other keep their users active.

• A way to differentiate users besides age would be welcome, however it should be investigated what kind of differentiators should be used and how to keep this user-friendly.

• The phenomena of the penny-gap has very little literature, more research is welcome.
11. References


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Hume, D. (2013, May 12). David Hume (Discipline X Games): “We make weight loss the rock n roll for middle aged men.” Retrieved from https://youtu.be/_9vXEYbzwfA


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### 12. Appendices

#### A) List of abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMVS</td>
<td>NL: Arbeidsomstandigheden, Milieu, Veiligheid &amp; Stralingsbescherming EN: Working conditions, environment, safety &amp; radiation protection</td>
</tr>
<tr>
<td>API</td>
<td>Application programming interface</td>
</tr>
<tr>
<td>B2B</td>
<td>Business-to-Business</td>
</tr>
<tr>
<td>B2C</td>
<td>Business-to-Consumer</td>
</tr>
<tr>
<td>BASE/X</td>
<td>Business Agility through Cross-Organizational Service Engineering</td>
</tr>
<tr>
<td>BM</td>
<td>Business Model</td>
</tr>
<tr>
<td>BRAVO</td>
<td>NL: Bewegen, Roken, Alcohol, Voeding &amp; Ontspanning EN: Exercise, Smoking, Alcohol, Nutrition &amp; Relaxation</td>
</tr>
<tr>
<td>CBS</td>
<td>NL: Centraal Bureau Statistiek EN: Statistics Netherlands</td>
</tr>
<tr>
<td>DPO</td>
<td>NL: Dienst Personeel en Organisatie EN: Office of personnel and organization</td>
</tr>
<tr>
<td>DXG</td>
<td>DisciplineXGames</td>
</tr>
<tr>
<td>FTE</td>
<td>Full-Time Equivalent</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross domestic product</td>
</tr>
<tr>
<td>GP</td>
<td>General Practitioner</td>
</tr>
<tr>
<td>Istat</td>
<td>IT: Instituto nazionale di statistica EN: Italian National Institute of Statistics</td>
</tr>
<tr>
<td>IV</td>
<td>Intravenous (medication)</td>
</tr>
<tr>
<td>OECD</td>
<td>The Organization for Economic Co-operation and Development</td>
</tr>
<tr>
<td>SQ</td>
<td>Sub question</td>
</tr>
<tr>
<td>TU/e</td>
<td>NL: Technische Universiteit Eindhoven EN: Eindhoven University of Technology</td>
</tr>
<tr>
<td>TI(M)</td>
<td>Telecom Italia (Mobile)</td>
</tr>
<tr>
<td>UX</td>
<td>User Experience</td>
</tr>
<tr>
<td>WMO</td>
<td>NL: Wet Maatschappelijke Ondersteuning EN: Social Support Act</td>
</tr>
<tr>
<td>WOM</td>
<td>Word of Mouth</td>
</tr>
</tbody>
</table>

*Table 22: Overview of abbreviations*
B) GDP of European regions

Gross domestic product (GDP) per inhabitant, in purchasing power standard (PPS), by NUTS 2 regions, 2009
(% of the EU-27 average, EU-27=100)

Source: Eurostat (online data code: name_e_e2gdp)

Figure 19: GDP per region
C) R&D in health-care

Graph 3: Government budget appropriations or outlays for R&D (OECD, 2013)
D) Tracking health indicators

<table>
<thead>
<tr>
<th>All adults (n=3,014)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Track weight, diet, or exercise routine</td>
<td>60</td>
</tr>
<tr>
<td>Track any other health indicators like blood pressure, sleep patterns, headaches, etc.</td>
<td>33</td>
</tr>
<tr>
<td>Track any health indicators for a loved one</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total who track any health indicator for themselves or others</strong></td>
<td><strong>69</strong></td>
</tr>
</tbody>
</table>

*Table 23: Percentage of adults tracking health indicators*
### E) Studies on health benefits of social support

<table>
<thead>
<tr>
<th>Health benefits</th>
<th>Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well-being in the workplace</td>
<td>(House, 1981)</td>
</tr>
<tr>
<td>Reduce psychological distress</td>
<td>(Taylor, 2011)</td>
</tr>
<tr>
<td>(anxiety/depression)</td>
<td></td>
</tr>
<tr>
<td>Psychological adjustment to HIV</td>
<td>(Turner-Cobb et al., 2002)</td>
</tr>
<tr>
<td>(Rheumatoid) arthritis</td>
<td>(Goodenow, Reisine, &amp; Grady, 1990; Penninx et al., 1998)</td>
</tr>
<tr>
<td>Cardiac/coronary artery disease</td>
<td>(Holahan, Moos, Holahan, &amp; Brennan, 1997; Penninx et al., 1998)</td>
</tr>
<tr>
<td>Improvement of patients with type 2 diabetes</td>
<td>(Strom &amp; Egede, 2012)</td>
</tr>
<tr>
<td>Recovering rate from a stroke</td>
<td>(Robertson &amp; Suinn, 1968)</td>
</tr>
</tbody>
</table>

*Table 24: Examples of studies on health benefits of social support*
F) Healthy wearable vendors

Figure 20: Wearable tech, vendor landscape (Walker, 2013)
G) Screen-shots of GameBus

Figure 21: Main screen

Figure 22: News feed

Figure 23: Achievements

Figure 24: Progress overview
Figure 25: Activities overview

Figure 26: Recent activities

Figure 27: Teams

Figure 28: Create new team
### H) Co-occurrence

Graph 4: Co-occurrence among codes

<table>
<thead>
<tr>
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<td>Selling Data</td>
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<td>4</td>
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<td>Opportunity</td>
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<td>n/a</td>
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<td>BASE/X</td>
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<td>Strength</td>
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<td>Free trial (Ft)</td>
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<td>1</td>
<td>1</td>
<td>n/a</td>
<td>1</td>
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<td>Dutch Market</td>
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<td>Licensing</td>
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<td>Reverse Utility</td>
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<td>n/a</td>
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</tr>
</tbody>
</table>
I) Profit graph of Vensim simulation

Graph 5: Compared profit
J) Volume Discount example

Graph 6: Volume discount, old model

Graph 7: Volume discount, new model
K) Costs per plan

Graph 8: Total costs per plan, old model

Graph 9: Total costs per plan, new model
L) Cost per user

Graph 10: Costs per user, old model

Graph 11: Costs per user, new model
M) New decision support

For how many clients do you want to buy GameBus? 500
This will give you a volume discount of: 25%

Normally this would cost per subscription: €10,00
Which totals to: €5,000,00
However with your volume you will pay per subscription: €7,50

In total you should pay €3,750

However there are options to reduce this:

<table>
<thead>
<tr>
<th>Share costs with your clients</th>
<th>Percentage paid by company</th>
<th>100,00%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage paid by clients</td>
<td>0,00%</td>
<td></td>
</tr>
</tbody>
</table>

Clients pay €0
This will cost the company 3750,00

<table>
<thead>
<tr>
<th>Offer Reverse-utility package</th>
<th>Reverse-utility percentage</th>
<th>50,00%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of users active</td>
<td>50,00%</td>
<td></td>
</tr>
<tr>
<td>Total discount percentage</td>
<td>25,00%</td>
<td></td>
</tr>
</tbody>
</table>

Clients profit from reverse-utility discount? Yes
Company will pay Synergetics €2,812,50
This will give a reverse utility discount of: €937,50
Total saved: €2,187,50

Graph 12: New decision support example
N) Distimo app research

Graph 13: Revenue share of the freemium business model (Schoger, 2013)
Graph 14: Average revenue per download (Schoger, 2014)
O) BASE/X BM radar template

Figure 29: BASE/X BM radar template (Grefen et al., 2013)
P) Commitment earnings

Figure 30: Commitment earnings for users and GameBus
Q) Freemium Vensim model

Potential Subscribers → Free users

- Advertising expenditure
- Ad Effectiveness
- Adoption from marketing
- Adoption Rate
- Contact Rate
- Adoption from Word of Mouth
- <Population level>
- Adoption Fraction
- Total Population

Free users → Paying subscriptions

- Quit percentage
- Popularity level
- Conversion Rate
- Upgrading percentage
- Downgrading Rate
- <Quit percentage>
- Total Users

Paying subscriptions → Profit

- Max engineers
- Min engineers
- Engineers
- <Total Users>
- Yearly fee
- Subscription Pricing
- <Advertising expenditure>
- Development costs
- Engineer Monthly Salary

Profit →

- Revenue Rate
- Cost Rate
- Infrastructure costs

First Year, Second Year, Third year, Fourth Year

Max engineers → Engineers

Min engineers → Engineers

<Total Users> → Engineers

<Total Users> → Profit

<Advertising expenditure> → Infrastructure costs

Revenue Rate → Profit

Cost Rate → Profit

Development costs → Profit

Engineer Monthly Salary → Profit

<Advertising expenditure> → Profit

Infrastructure costs → Profit

Total Users → Profit

First Year, Second Year, Third year, Fourth Year
### Vensim variables

<table>
<thead>
<tr>
<th>Name</th>
<th>Meaning</th>
<th>Formula (Base value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ad Effectiveness</td>
<td>Effectiveness of marketing campaign</td>
<td>Constant (5e-5)</td>
</tr>
<tr>
<td>Adoption Fraction</td>
<td>The fraction of contacts that lead to adoption.</td>
<td>Constant (0.015)</td>
</tr>
<tr>
<td>Adoption from marketing</td>
<td>Actual number of weekly adopters because of marketing</td>
<td>Fraction adopting through marketing*Potential Subscribers</td>
</tr>
<tr>
<td>Adoption from Word of Mouth</td>
<td>Weekly number of weekly adopters because of WOM</td>
<td>Contact Rate<em>Adoption Fraction</em>Potential Subscribers*Total Users/Total Population</td>
</tr>
<tr>
<td>Adoption Rate</td>
<td>Weekly total adoption, corrected for popularity level</td>
<td>(Adoption from marketing+Adoption from Word of Mouth)*(Popularity level/5)</td>
</tr>
<tr>
<td>Advertising expenditure</td>
<td>Expenditure at given time, throughout 4 years</td>
<td>PULSE(0, 52)*First Year+PULSE(52, 52)*Second Year+PULSE(104, 52)*Third year+PULSE(156, 52)*Fourth Year</td>
</tr>
<tr>
<td>Contact Rate (XJ Technologies, 2007)</td>
<td>The rate, with which adopters come into contact with potential adopters, and try to persuade them to adopt</td>
<td>Constant (1)</td>
</tr>
<tr>
<td>Development costs</td>
<td>Initial costs to build GameBus</td>
<td>Constant (450,000)</td>
</tr>
<tr>
<td>Engineer monthly salary</td>
<td>Monthly salary paid to engineers working on GameBus</td>
<td>Constant (2400)</td>
</tr>
<tr>
<td>Engineers</td>
<td>Number of engineers working on GameBus</td>
<td>MAX(Min engineers,MIN(0.02*SQRT(Total Users), Max engineers))</td>
</tr>
<tr>
<td>First-Fourth Year</td>
<td>The expenditure of marketing per week in given year</td>
<td>Constant (3000)</td>
</tr>
<tr>
<td>Fraction adopting through marketing</td>
<td>Weekly fraction of potential subscribers that will adopt GameBus because of the marketing campaign</td>
<td>(\ln(Advertising \text{ expenditure})^2 \times \text{Ad Effectiveness})</td>
</tr>
<tr>
<td>Free users</td>
<td>Users of GameBus who are not premium members</td>
<td>Downgrading Rate+Adoption Rate-Stop using rate-Conversion Rate (10)</td>
</tr>
<tr>
<td>Infrastructure costs</td>
<td>Cost per user per week to make sure the servers are able to maintain uptime</td>
<td>Constant (0.1 eurocent)</td>
</tr>
<tr>
<td>Max engineers</td>
<td>Maximum number of engineers needed for GameBus</td>
<td>Constant (5)</td>
</tr>
<tr>
<td>Min engineers</td>
<td>Minimum number of engineers needed for GameBus</td>
<td>Constant (0.5)</td>
</tr>
<tr>
<td><strong>Popularity level</strong></td>
<td>A fictional number to indicate how popular GameBus is, ranging 0 – 10</td>
<td>Constant (6)</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td><strong>Potential Subscribers</strong></td>
<td>Number of potential subscribers for GameBus</td>
<td>Stop using rate-Adoption Rate (1e7)</td>
</tr>
<tr>
<td><strong>Profit</strong></td>
<td>Profit made by GameBus</td>
<td>Revenue Rate-Cost Rate (-Development costs)</td>
</tr>
<tr>
<td><strong>Quit Percentage</strong></td>
<td>Percentage of users who will downgrade from premium or stop using GameBus weekly, based on the popularity level</td>
<td>$((10-\text{Popularity level})^2)/2500$</td>
</tr>
<tr>
<td><strong>Revenue Rate</strong></td>
<td>The revenue generated by the subscribing users per week</td>
<td>Paying subscriptions*Subscription Pricing</td>
</tr>
<tr>
<td><strong>Stop using rate</strong></td>
<td>Weekly total users who stop using GameBus</td>
<td>Quit percentage*Free users</td>
</tr>
<tr>
<td><strong>Subscription pricing</strong></td>
<td>Weekly price of subscription</td>
<td>Yearly fee/52</td>
</tr>
<tr>
<td><strong>Total population</strong></td>
<td>Total population is the total potential market size.</td>
<td>Total Users+Potential Subscribers</td>
</tr>
<tr>
<td><strong>Total users</strong></td>
<td>Total number of users of GameBus, both free and premium</td>
<td>Free users+Paying subscriptions</td>
</tr>
<tr>
<td><strong>Upgrading percentage</strong></td>
<td>Percentage of Free users who will upgrade to premium weekly, based on the popularity level and yearly fee</td>
<td>$\sqrt{\text{Popularity level}}/(100*\text{Yearly fee})$</td>
</tr>
<tr>
<td><strong>Yearly fee</strong></td>
<td>Yearly amount premium members pay to use GameBus</td>
<td>Constant (10)</td>
</tr>
</tbody>
</table>

*Table 25: Vensim variables meaning and formula*
## S) Background data decision support

### Family pack

<table>
<thead>
<tr>
<th>Users</th>
<th>Costs</th>
<th>costs/user</th>
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<tbody>
<tr>
<td>2</td>
<td>€ 30,00</td>
<td>€ 15,00</td>
</tr>
<tr>
<td>3</td>
<td>€ 45,00</td>
<td>€ 15,00</td>
</tr>
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<td>4</td>
<td>€ 40,00</td>
<td>€ 10,00</td>
</tr>
<tr>
<td>5</td>
<td>€ 50,00</td>
<td>€ 10,00</td>
</tr>
<tr>
<td>6</td>
<td>€ 60,00</td>
<td>€ 10,00</td>
</tr>
<tr>
<td>7</td>
<td>€ 56,00</td>
<td>€ 8,00</td>
</tr>
<tr>
<td>8</td>
<td>€ 64,00</td>
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<td>9</td>
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<tr>
<td>10</td>
<td>€ 80,00</td>
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</tr>
<tr>
<td>11</td>
<td>€ 88,00</td>
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<tr>
<td>12</td>
<td>€ 96,00</td>
<td>€ 8,00</td>
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<td>13</td>
<td>€ 104,00</td>
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</tr>
<tr>
<td>14</td>
<td>€ 112,00</td>
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<td>15</td>
<td>€ 112,50</td>
<td>€ 7,50</td>
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<tr>
<td>16</td>
<td>€ 120,00</td>
<td>€ 7,50</td>
</tr>
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<td>17</td>
<td>€ 127,50</td>
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</tr>
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<td>18</td>
<td>€ 135,00</td>
<td>€ 7,50</td>
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<td>19</td>
<td>€ 142,50</td>
<td>€ 7,50</td>
</tr>
<tr>
<td>20</td>
<td>€ 150,00</td>
<td>€ 7,50</td>
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</table>

### Volume discount

<table>
<thead>
<tr>
<th>Volume discount</th>
<th>Discount</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>“0-99”</td>
<td>0%</td>
<td>min: 0</td>
</tr>
<tr>
<td>“100-249”</td>
<td>10%</td>
<td>min: 100</td>
</tr>
<tr>
<td>“250-999”</td>
<td>25%</td>
<td>min: 250</td>
</tr>
<tr>
<td>“1000+”</td>
<td>50%</td>
<td>min: 1000</td>
</tr>
</tbody>
</table>

*Table 26: Background data for decision support, new model*
T) Interview protocols

Front general interviews

Interview protocol
Paul Brouwers

Master thesis project
Eindhoven University of Technology

Materials
- Interview protocol
- BASE/X BM radars
- Notepad
- Tablet
- Recorder (Smartphone)

Interviewee name: .............................................. Company name: ........................................................

Introduction
- English (Dutch if preferred)
- Self
- GameBus

- App
- Connecting friends & family
- Physical, cognitive, socially
  - unobtrusive
  - Everyone can win
  - Play what you want (supports 'all' apps)
  - wear what you want (supports 'all' wearables)
- Challenges

Research
- BMs
  - Traditional (goods-based)
  - BASE/X (service-based)

Interview
- 3 BMs
- BASE/X BM visualization

Interviewee
- Background/function
- Relation to GameBus
General interview 1 (GameBus project leader)

Corporate customers model (B2B)

Volume licensing

- Large client base
- Distribute GameBus to their clients at a discount

1) Do you have any questions regarding this BM?

2) One of our first target customers is a home care organization, do you think this BM is viable in such an environment?
   a) Positive : What do you think are the key success factors of this target customer?
   b) Negative : What do you think are the key failure factors of this target customer?

3) Another target customer is a Telecommunication company, do you think this BM is viable in such an environment?
   a) Positive : What do you think are the key success factors of this target customer?
   b) Negative : What do you think are the key failure factors of this target customer?

4) Can you think of other customer groups for this type of customers (i.e. with a large client base)

   *If nothing comes up, help with suggestions like (student) housing corporations or municipalities.*

5) The idea is to give a group of family (or friends) around the person who has access to GameBus also access. Do you think this should be a fixed amount or this number can be increased by paying a higher fee?

   a) Fixed : Why do you think this is the best option?
      : What number of family/friends do you think is an appropriate amount?
   b) Variable : Why do you think this is the best option?
      : How many different plans do you think is optimal?
      
      *Draw a table with number of plans, people and costs*
      : What number of family/friends should be in the different plans?
      : What difference in costs should these plans approximately be?*

---

1 Results of these questions will be used to ask a more specific question to employee of Synergetics.
6) Synergetics will receive valuable data about the users of GameBus. This data can also be valuable for the corporate customers. In what way should this data be shared with them?

7) Do you have any thoughts on improving this BM?

8) Do you see any flaws in this BM?

**Freemium model (B2C)**

Freemium

- Free to download
- Upgrades
  - Individual apps
  - Packs
    - Game providers can pay to lower the price
  - Full membership

1) Do you have any questions regarding this BM?

2) Our first target customer is a middle-aged man (or woman) who is concerned about the health of their parents (and possibly children) and want to work on this as a family. Do you think this is a viable target group?

   a) Positive: What do you think are the key success factors of this target customer?
   b) Negative: What do you think are the key failure factors of this target customer?

3) What basic features should be in the free model?

4) To trigger free users to become paying customers a free trial period is offered, how many days do you think is enough to convince someone to upgrade?

5) What other methods could you think of to trigger free users?

   *If nothing comes up, help with suggestions like a challenge only for full membership with a nice prize*

---

*Results of these questions will be used to ask a more specific question to employee of Synergetics*
6) User can choose not to go premium right away, but buy specific apps or packs (multiple apps with a volume discount). Do you think this option should be implemented?

7) Game Suppliers can be given the option to promote their apps. Should these Game Suppliers be targeted actively or should the Game Suppliers have a specific place where they can manage this?

8) Also in this BM the idea is to give a group of family (or friends) around the person who has access to GameBus also access. Do you think in this BM a different approach is better?

a) No : Do you think the same arguments are suitable for this BM as for the previous?

b) Fixed : Why do you think this is the best option?
   : What number of family/friends do you think is an appropriate amount?

c) Variable : Why do you think this is the best option?
   : How many different plans do you think is optimal?
   : What number of family/friends should be in the different plans?
   : What difference in costs should these plans approximately be?^3

9) What do you think is the added value of a free user?

   *If 'create challenges' isn't mentioned, mention it*

10) How do you think these free users should be encouraged to create interesting challenges?

11) Do you think the data created by full users is enough to keep GameBus running, making it attractive to give everyone complete access to increase this data stream?

**Freemium model continued (B2B)**

Advertisement/rewards companies

- Set up challenges
- Credits
  - high costs, intrusive advertising
  - cheaper, less intrusive advertising

12) Do you have any questions regarding this second part of the BM?

13) Do you think working with credits is a viable option?

---

^3 Results of these questions will be used to ask a more specific question to employee of Synergetics
14) What kind of high cost advertisement of their challenges can you think of?

*If nothing comes up, help with suggestions like targeting specific persons with a push-message or an email and/or users have to actively join the challenge*

15) What kind of low cost advertisement of their challenges can you think of?

*If nothing comes up, help with suggestions like the challenge will be added to the website on a prominent place, but will not be actively marketed and/or the challenge is joined automatically by all players*

16) Do you have any thoughts on improving this BM?

17) Do you see any flaws in this BM?

**Commitment model (B2C)**

- Bonus model
  - Not to be implemented in the near future
    - Commitment to yourself
    - Commitment within your circle
    - Competitive commitment within a circle
    - Competitive commitment between circles
  - GameBus takes portion of financial streams

1) Do you have any questions regarding this BM?

2) Do you think this kind of BM should be pursued?

a) Positive: What do you think are the key success factors of this BM?

b) Negative: What do you think are the key failure factors of this BM?

3) What type of customer do you think should be targeted for the first type?

Continue to BASE/X paragraph
4) For the second type of commitment our target customer is a middle aged man (or woman) who is concerned about the health of their parents and children and want to give incentives to work on this as a family. Do you think this is a viable target group?

a) Positive: What do you think are the key success factors of this target customer?  
Can you think of other groups that are potentially good target customers?

b) Negative: What do you think are the key failure factors of this target customer?  
What kind of customers do you think should be targeted?

5) For the third and fourth type of commitment cross-fit groups are targeted. Do you think this is a viable target group?

a) Positive: What do you think are the key success factors of this target customer?  
Can you think of other groups that are potentially good target customers?

b) Negative: What do you think are the key failure factors of this target customer?  
What kind of customers do you think should be targeted?

6) Do you have any thoughts on improving this BM?

7) Do you see any flaws in this BM?
Corporate customers model/Reseller (B2B)

Volume licensing

- Large client base
- Distribute GameBus to their clients at a discount

1) Do you have any questions regarding this BM?

2) One of our first target customers is a home care organization, do you think this BM is viable?
   a) Positive: What do you think are the key success factors of this target customer?
   b) Negative: What do you think are the key failure factors of this target customer?

3) Another target customer is a Telecommunication company, do you think this BM is viable?
   a) Positive: What do you think are the key success factors of this target customer?
   b) Negative: What do you think are the key failure factors of this target customer?

4) Can you think of other customer groups for this type of customers that are viable? (i.e. with a large client base)

   *If nothing comes up, help with suggestions like (student) housing corporations or municipalities, salesmen of wearables.*

5) Do you have any thoughts on improving this BM, or adjusting it?

6) Do you see any flaws in this BM?
Freemium model (B2C)

Freemium

• Free to download
• Upgrades
  ○ Individual apps
  ○ Packs
    ▪ Game providers can pay to lower the price
    ○ Full membership

1) Do you have any questions regarding this BM?

2) Our first target customer is a middle aged man (or woman) who is concerned about the health of their parents (and possibly children) and want to work on this as a family. Do you think this is a viable target group?

   a) Positive: What do you think are the key success factors of this target customer?
      b) Negative: Can you think of other groups that are potentially good target customers?

   a) Positive: What do you think are the key failure factors of this target customer?
   b) Negative: What kind of customers do you think should be targeted?

3) Game Suppliers can be given the option to promote their apps. Do you think they are open to this?

Freemium model continued (B2B)

Advertisement/rewards companies

• Set up challenges
• Credits
  ○ high costs, intrusive advertising
  ○ cheaper, less intrusive advertising

4) Do you have any questions regarding this second part of the BM?

5) Do you think working with credits is a viable option?
6) Do you have any thoughts on improving this BM, or adjusting it?
7) Do you see any flaws in this BM?

**Commitment model (B2C)**

Bonus model

- Not to be implemented in the near future
  - Commitment to yourself
  - Commitment within your circle
  - Competitive commitment within a circle
  - Competitive commitment between circles
- GameBus takes portion of financial streams

1) Do you have any questions regarding this BM?
2) Do you think this kind of BM would work?

   a) Positive : What do you think are the key success factors of this BM?
   b) Negative : What do you think are the key failure factors of this BM?

3) What type of customer do you think should be targeted for the first type?

4) For the second type of commitment our target customer is a middle aged man (or woman) who is concerned about the health of their parents and children and want to give incentives to work on this as a family. Do you think this is a viable target group?

   a) Positive : What do you think are the key success factors of this target customer?
   b) Negative : What do you think are the key failure factors of this target customer?

5) For the third and fourth type of commitment cross-fit groups (very tough workouts) are targeted. Do you think this is a viable target group?

   a) Positive : What do you think are the key success factors of this target customer?
   b) Negative : What do you think are the key failure factors of this target customer?
General interview 3 (Italy)

Corporate customers model/Reseller (B2B)

Volume licensing

- Large client base
- Distribute GameBus to their clients at a discount

1) Do you have any questions regarding this BM?

2) One of our first target customers is a home care organization, do you think this BM is viable in Italy?
   a) Positive: What do you think are the key success factors of this target customer?
   b) Negative: What do you think are the key failure factors of this target customer?

3) Another target customer is a Telecommunication company, do you think this BM is viable in Italy?
   a) Positive: What do you think are the key success factors of this target customer?
   b) Negative: What do you think are the key failure factors of this target customer?

4) Can you think of other customer groups for this type of customers that are viable in Italy? (i.e. with a large client base)

   *If nothing comes up, help with suggestions like (student) housing corporations or municipalities, salesmen of wearables.*

5) Do you have any thoughts on improving this BM, or adjusting it to suit Italy better?

6) Do you see any flaws in this BM?
Freemium model (B2C)

Freemium

- Free to download
- Upgrades
  - Individual apps
  - Packs
    - Game providers can pay to lower the price
  - Full membership

1) Do you have any questions regarding this BM?

2) Our first target customer is a middle aged man (or woman) who is concerned about the health of their parents (and possibly children) and want to work on this as a family. Do you think this is a viable target group in Italy?

   a) Positive: What do you think are the key success factors of this target customer?
      - Can you think of other groups that are potentially good target customers?

   b) Negative: What do you think are the key failure factors of this target customer?
      - What kind of customers do you think should be targeted?

3) Game Suppliers can be given the option to promote their apps. Do you think Italian game suppliers are open to this?

Freemium model continued (B2B)

Advertisement/rewards companies

- Set up challenges
- Credits
  - high costs, intrusive advertising
  - cheaper, less intrusive advertising

4) Do you have any questions regarding this second part of the BM?

5) Do you think working with credits is a viable option in Italy?
6) Do you have any thoughts on improving this BM, or adjusting it to suit Italy better?

7) Do you see any flaws in this BM?

**Commitment model (B2C)**

*Bonus model*

- Not to be implemented in the near future
  - Commitment to yourself
  - Commitment within your circle
  - Competitive commitment within a circle
  - Competitive commitment between circles
- GameBus takes portion of financial streams

1) Do you have any questions regarding this BM?

2) Do you think this kind of BM would work in Italy?

a) Positive: What do you think are the key success factors of this BM?
   How would you rate these four different types on a scale from 1 to 10?
b) Negative: What do you think are the key failure factors of this BM?

3) What type of customer in Italy do you think should be targeted for the first type?

4) For the second type of commitment our target customer is a middle aged man (or woman) who is concerned about the health of their parents and children and want to give incentives to work on this as a family. Do you think this is a viable target group for Italy?

a) Positive: What do you think are the key success factors of this target customer?
   Can you think of other groups that are potentially good target customers?
b) Negative: What do you think are the key failure factors of this target customer?
   What kind of customers do you think should be targeted?

5) For the third and fourth type of commitment cross-fit groups (very tough workouts) are targeted. Do you think this is a viable target group for Italy?

a) Positive: What do you think are the key success factors of this target customer?
   Can you think of other groups that are potentially good target customers?
b) Negative: What do you think are the key failure factors of this target customer?  
   : What kind of customers do you think should be targeted?

6) Do you have any thoughts on improving this BM, or adjusting it to suit Italy better?
7) Do you see any flaws in this BM?

Data

We were brainstorming about the use of the data generated by the app. Perhaps a specific challenge set by for example a university would be to upload your data for them to use, and rewarding the users for this.

1. Do you think the Italians would be OK to share their data with trusted parties, i.e. they manually give consent to specific organizations.

2. Do you think Italian companies or knowledge institutions are open to (in the long run) pay for such data?

3. Do you have other ideas how to earn from this data?
Front B2B Stakeholder Interviews

Interview protocol
Paul Brouwers
Eindhoven University of Technology

Interviewee name: .............................................. Company name: ..................................................

Materials

Send
- Relevant BM explanations
- Relevant BASE/X BM Radars

Bring
- Interview protocol
- BASE/X BM radars
- Notepad
- Tablet
- Recorder (Smartphone)

Introduction

English or Dutch
Self
GameBus
- App
- TU/e + Trento RISE
- European Project
- Connecting friends & family
- Physical, cognitive, socially
  - Unobtrusive
  - Everyone can win
  - Play what you want (supports 'all' apps)
  - Wear what you want (supports 'all' wearables)
- Challenges

Research
- BMS
  - Traditional (goods-based)
  - BASE/X (service-based)

Interview
- BMS based on your profile
- BASE/X radar

Interviewee
- Background/function
B2B Stakeholder interview 1 (Knowledge Institution)

Data model

Analytics:
- You could make a challenge and see leaderboards of this specific challenge
  - Challenges for own employees are free if TU will become a corporate sponsor, otherwise paid
- Small number of analytics (queries) for free
- Pay for more extensive analytics

Gather consent:
- Challenge involving giving consent
- Marketplace with request and demand
- Maybe clients/employees give automatically consent to their affiliated corporation.

1) Do you have any questions regarding this BM?
2) What are your thoughts on this BM?

With the BASE/X radars, discuss all terms regarding “Knowledge institution”

3) What kind of data and analytics would be useful for TUe?
4) Would you consider paying for extensive analytics of specific set of users?
   1. What kind of budget is available?
5) If you would receive free extensive analytics for a period of time first, do you think this could demonstrate its use?
6) Do you have any thoughts on improving this BM?
7) Do you see any flaws in this BM?
8) What possible complications of implementation can you think of?
Dutch Insurance System

Explain how the insurance system works for healthcare institutions, such as home care organizations like ZuidZorg in the Eindhoven region.

What are criteria to implement/use such an application.

Corporate customers model (B2B)

Volume licensing
  - Large client/employee base
  - Distribute GameBus to their clients as part of their service
  - Check-up on clients/employees
  - Health benefits on users
  - Challenges within corporation for free

1) Do you have any questions regarding these BMs?

2) Corporate customers might use this as a way to stimulate the health of their clients or employees.

   a) Health Care corporations like ZuidZorg (home care) are interested in using this feature. However, doing this might cannibalize their own BM, since less nurses etc. are necessary. Getting support from insurance might help to convince such organizations to invest in such applications. What role do you think an insurance could play in this case?

   b) Also employers might want to use this to improve the health of their employees. Possibly employers with a collective insurance can get triggered by the insurance with a budget for preventive health.

3) The insurer can also act as a corporate customer themselves. Clients may benefit from the use of this app which lowers insurance claims.
Data model

Analytics:
- Corporate customers make specific challenges and check leaderboards for basic idea of activity
- Small number of analytics (queries) for free
- Pay for more extensive analytics

Gather consent:
- Challenge involving giving consent
- Marketplace
- Maybe clients/employees give automatically consent to their affiliated corporation.

1) Do you have any questions regarding this BM?

With the BASE/X radars, discuss all terms regarding “Corporate Customer”

2) Would you consider this paying extra for more extensive analytics?
3) Do you have any thoughts on improving this BM?
4) Do you see any flaws in this BM?
5) What possible complications of implementation can you think of?
Freemium model Sponsor

Advertisement/rewards companies

- Set up challenges
- Credits
  - high costs, intrusive advertising
  - cheaper, less intrusive advertising

1) Do you have any questions regarding this BM?

With the BASE/X radars, discuss all terms regarding “Sponsor”

2) Would you consider this kind of ‘advertising’ for your own company?

3) Do you like the idea of credits to pay for different kind of advertisement or do you prefer another way, such as per per challenge or a subscription base?

4) Do you have any thoughts on improving this BM?

5) Do you see any flaws in this BM?

6) What possible complications of implementation can you think of?
Corporate customers model (B2B)

Volume licensing

- Large client/employee base
- Distribute GameBus to their clients as part of their service
- Check-up on clients/employees
- Health benefits on users
- Challenges within corporation for free

1) Do you have any questions regarding these BMs?

With the BASE/X radars, discuss all terms regarding “Corporate Customer”

2) Do you think your company will be open to the corporate customer model?
   - For their employees
   - For their clients

   1. Should they pay for this or should your clients?

3) Additional option: Reverse utility → Interesting?
Freemium model Sponsor

Advertisement/rewards companies

- Set up challenges
- Credits
  - high costs, intrusive advertising
  - cheaper, less intrusive advertising

1) Do you have any questions regarding this BM?

With the BASE/X radars, discuss all terms regarding “Sponsor”

2) Would you consider this kind of 'advertising' to reach out of you company's community?

3) Do you like the idea of credits to pay for different kind of advertisement or do you prefer another way, such as per per challenge or a subscription base?

4) Do you have any thoughts on improving this CM?

5) Do you see any flaws in this BM?

6) What possible complications of implementation can you think of?
Data model

Analytics:
- Corporate customers make specific challenges and check leaderboards for basic idea of activity
- Small number of analytics (queries) for free
- Pay for more extensive analytics

Gather consent:
- Challenge involving giving consent
- Marketplace
- Maybe clients/employees give automatically consent to their affiliated corporation.

1) Do you have any questions regarding this BM?
2) What are your thoughts on this BM?

With the BASE/X radars, discuss all terms regarding “Corporate Customer”

3) What kind of data and analytics would be useful for your company?
4) Would you consider this paying extra for more extensive analytics
   1. What kind of budget is available?
5) If you would receive free extensive analytics for a period of time first, do you think this could demonstrate its use?
6) Do you have any thoughts on improving this BM?
7) Do you see any flaws in this BM?
8) What possible complications of implementation can you think of?
B2B Stakeholder Interview 5 (TU/e)

Corporate customers model (B2B)

Volume licensing

- Large client/employee base
- Distribute GameBus to their clients as part of their service
- Check-up on clients/employees
- Health benefits on users
- Challenges within corporation for free

1) Do you have any questions regarding these BMs?

With the BASE/X radars, discuss all terms regarding “Corporate Customer”

2) Do you think TU/e will be open to the corporate customer model?
   - For their employees
   - For their students

   1. Should they pay for this or should TU/e?

   3) Additional option: Reverse utility → Interesting?

Freemium model Sponsor

Advertisement/rewards companies

- Set up challenges
- Credits
  - high costs, intrusive advertising
  - cheaper, less intrusive advertising

1) Do you have any questions regarding this BM?

With the BASE/X radars, discuss all terms regarding “Sponsor”

2) Would you consider this kind of ‘advertising’ to reach out of the TU/e community?

3) Do you have any thoughts on improving this BM?

4) Do you see any flaws in this BM?

5) What possible complications of implementation can you think of?
## U) BASE/X questions

<table>
<thead>
<tr>
<th>Characteristic</th>
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<tbody>
<tr>
<td>How <strong>understandable</strong> are the <strong>terms</strong> in the radar?</td>
<td></td>
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<tr>
<td>Is it <strong>clear</strong> what the BM are about?</td>
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<tr>
<td>How <strong>complete</strong> is this BM representation?</td>
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<tr>
<td>To what extent does this radar help to make the BM <strong>concrete</strong>?</td>
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*Table 27: BASE/X characteristics*
V) Summary of Interviews

General Interview 1 (Van Gorp, 2015c)

Respondent [1]
Who: Pieter Van Gorp
Company: TU/e
When: March 5, 2015

Introduction
Pieter is project leader of GameBus and concept developers based on the strategic innovation agenda of EIT ICT Labs. Besides this Pieter is supporting PDEng students which focus on the User Experience and the API Integrator & Data model designer. Furthermore he is my Master thesis mentor.

Corporate customers can re-use the challenges made by the individual users (link between corporate and community). Here, nice rewards can be earned and this is also a marketing instrument, whereas with the community this is protected because you do not want arbitrary people joining your only challenge.

Some updates about the introduction to the interview was given by Pieter.

Corporate customer
Pieter asks if there is any indication about the costs a company will be facing. For example ZuidZorg has a couple thousand clients, will there be a standard amount of family members. This will be discussed later in the interview. Furthermore Pieter wants to know if they should pay Synergetics beforehand, with the risk that 70% of the users will not use the product. How can we invoice this properly, when a code is given to a client but not used. Perhaps pay in advance, but receiving this back after x-days of no activation. Pieter thinks the best option to solve this by letting these details be handled in negotiations between GameBus (Synergetics) and corporations (such as ZuidZorg) by account managers, sales employees or similar. There are many more parameters, such as the height of discount. This sales person might need a spreadsheet to quickly view the profitability of the given option.

Home care organizations such as ZuidZorg, but also Archipel, Lunet are (potential) target customers. This is because they have budget to innovate, or at least do projects. With classic organizations it is harder to make money available for such projects, and then make GameBus priority number one is harder. In Italy Pieter believed this is more government centralized in these home care organizations, with a fixed budget and no room for financing such projects as GameBus. In Italy it would be wiser to go straight to provincial or national governments.

Telecommunication companies was a second target customer Pieter suggested to reach the end-user directly in markets like Italy. Where families with enough money (or at least one member) can buy GameBus for the whole family, such as a 40-50 year old male with children and (living) parents. These will change from provider from time to time and will want to try out something new. Telecommunication provider might be to broad, might be better mobile phone provider (in the example of TI). But in the region Eindhoven, Fabrizio mentioned there

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7 http://www.eitictlabs.eu/
are broadband organizations that install internet. With these companies GameBus could bypass the big companies such as KPN, and add internet to the GameBus package (besides the app/service).

Pieter compares GameBus family packs with Netflix, where there are several packs available. Flexibilities are possible also with GameBus, with multiple packs. One or two users are ideal for people who are not in a bigger family primary circle, but want to join. For example your friends have GameBus through their family, but you want to join their GameBus friends group. Carolina prefers groups of 5 where Paul from Synergetics goes for an ideal size of 6.

There should be a graph where it can be scale able with steps of one person added. Some form of volume discount with your family size bigger means cheaper per person. There should be an incentive to buy a larger family pack, as Pieter mentioned that a pack of 10 persons would be a lot cheaper (per person) than a pack of 4.

Data-wise corporate customers can only see the leader-boards. Where individual activities are placed at the individuals themselves. If corporations want specific activities to be monitored they should create a specific challenge.

For 2016 there should be more possible corporate customers identified, such as sports clubs and municipalities.

**Freemium**

Pieter does not see apps like Strava to pay Synergetics, but other apps might. At the start apps will not come to GameBus, but hopefully at a later stage they will, after some critical mass is achieved.

Free users will have added value by making cool challenges and word of mouth. To trigger users to use GameBus and make challenges classic advertisement is key. When an app is big enough, with enough users, there will be some users who will make those cool challenges. Like with Facebook where market-place-like pages were created, but only after it had a huge following.
General Interview 2 (Vervenne, 2015)

Respondent [2]
Who: Luk Vervenne
Company: Synergetics
When: March 16, 2015

Introduction
Luk Vervenne is CEO of Synergetics. A data management company.

Corporate customer
Luk mentions the existence of 'ticks' in online platforms. Normally in these platforms customers pay per tick, this can be transactions, events or query etc. The platform has a certain capacity, and this has the ability to process a certain amount of ticks. Every time something happens the client pays, this also depends also on the type of tick:
1. Transactions (data needed)
2. Events
3. Analytics (queries and insights)

Basically ticks are a utility based way of invoicing the data use. Every time something happens, a tick is happening. But for games and GameBus, subscription is a better choice. Tick fees can be taken care of by a (high enough) subscription fee.

Luk mentions Zuora as an easy way for the 'subscription economy', where all types of pricing is possible. Luk believes that the pricing strategy with volume licensing, where a higher discount is given if more subscriptions are bought, upgrades the offer. Where people buy a large-as-possible package, because this is more attractive. More users creates up-selling, because they will possibly buy new/more expensive packages. Luk emphasizes that it is important what you offer to the clients.

Home care organizations could use GameBus to organize social care and have a client group which might need GameBus because of social exclusion because this costs the home care organizations money. Since they are triggered by insurers to keep an eye on cost-benefit. The insurer is interested what the outcome is of a certain patient problem after a period of time and that tension field is important for the insurer. If health becomes cheaper by using GameBus, this is a positive point for insurers.

Other target customers are in the field of social reintegration. The municipalities are responsible for this kind of care, and the costs should be low.

Freemium
As target customer Luk thinks it can come from several different groups; different scenarios. A middle-aged man (40-50) who wants to work on the health of the family or a supporting counselor (this would go more to corporate customer) who comes with the idea. But also youngsters could initiate this type of care, since they might see health problems in their family. Eventually the young will help the elder.
Luk shows a more detailed view of health, not only physical, cognitive and social. This could

8 https://www.zuora.com/
be enriched within GameBus to give a more medical oriented overview.

Luk suggests that users can identify what kind of challenges they want from what kind of sponsors. This way challenges can be targeted at the right users. Luk is not convinced that giving at random challenges is the right way. It should be a two-way stream. Luk suggests letting the users play a game, to identify what he looks for/likes.

Commitment
Luk questions whether elderly will understand this feature, but this is not the target group. Luk asks what percentage is taken by GameBus. Luk agrees that this should be variable, since when a lot of people miss their target more money can be taken. Also new users could be triggered by this functionality.

Data
The data is already uploaded to Synergetics but can only be used when consent is given. Luk believes that for many companies it is not necessary to actually have the data, but only have the analytics. The analytics is only run over consented data. The reason that Synergetics keeps hold of the personal data is because “You don’t send data around to analytics. Analytics instead comes to the data (lake)”. Synergetics places the analytics around the data. Luk thinks about in-app upgrades to receive consent for data use. However it could be difficult to implement this in the linked apps. However there is an agreement between apps and GameBus so such a feature could maybe be implemented in the future. Luk mentions the article about Kantara UMA (Brennan, 2015).

Other
Luk suggests some sort of meta-game among different games or challenges and if you lack some points somewhere or have a lot of points outside of these specific games you could upgrade your points to change form or sell/buy it.

BASE/X
Luk does not see the benefit of the round shape of the radar. He prefers seeing this in a spreadsheet. Partially because the text is not horizontally aligned at the sides of the radar. Luk identifies the radar as a taxonomy, useful for brainstorming and filling these radars in. Luk prefers the joined Free+premium user as to the split up radars (2 separate radars for free and premium).
General interview 3 (Cuoghi, 2015)

Respondent [3]
Who: Andrea Cuoghi
Company: Trento RISE
When: March 17, 2015

Introduction
Andrea is working on GameBus in Italy, supporting the user evaluation. Studied sociology, master management of enterprises. First experience in Trento RISE.

Corporate customer
The model differs from the type of corporate business is targeted. In Italy, care providers have a 5-year contract with the government. In Italy innovation is not a big factor in the public health system, but it could be a possibility. However, private organizations do not have this problem, but these have a lower client base.

Andrea sees a lot of potential in the more private companies, such as TI. He sees little limits from the types of corporations, also more local companies such as museums or cinemas. He thinks GameBus is ideal to promote a new product. This would go more towards the sponsorship.

Freemium
Andrea thinks it is a good option to give discount when there are more people in your group, like Netflix. Andrea thinks the most viable target group will be middle-aged (parents): 30-50 years old, who are familiar with sports and apps. Not much different than the Dutch target group.
If the user base is large enough, wearables and apps will be open to promoting within GameBus (to upgrading users). Andrea likes to see some sort of marketplace where new apps can be displayed, game suppliers might have to pay for this exposure.
Paying with credits opposed to direct money is a viable option in Italy.

Commitment
Andrea thinks Italians might be scared in a way, he can't really tell if it is viable. He cannot rate the different types before user testing. Cross fitting as a target group is not really viable, but activities like natural tracking, hiking, mountain climbing are more normal in that region of Italy.

Data
Giving away data is something new, but especially younger people are OK with this if they know where their data is going. Andrea does not know if companies will pay for data, depends on how rich this data is.
Andrea does not know any specific points where money can be earned in other ways from this data.

BASE/X
It took Andrea a while to understand the radar. He prefers the joined Free+Premium radar.
B2B Stakeholder Interview 1

Stakeholder [4]

-Summary located in the Confidential Appendix-

B2B Stakeholder Interview 2

Stakeholder [5]

-Summary located in the Confidential Appendix-
B2B Stakeholder Interview 3 (Greidanus & Hulsen, 2015)

Respondent [6]
Who: Fabrizio Greidanus & Marcel Hulsen
Company: ZuidZorg
When: April 22, 2015

Introduction
Marcel Hulsen studies Human Resource Management and first worked at client registration in ZuidZorg, but moved to the Innovatiewerkplaats [innovation workplace]. He is currently active on track & trace projects like the Wuzzi Alert, birth care at the St. Anne hospital and the external communication from the innovation workplace through especially social media. Fabrizio Greidanus started as quartermaster in 2013 at the innovation workplace. He guides projects where technology is used to keep clients longer at home, keeping the actual use for the clients in mind.

Fabrizio mentioned about the core value 'unobtrusiveness' the app BeWell. The BeWell app continuously tracks user behaviors along three key health dimensions without requiring any user input — the user simply downloads the app and uses the phone as usual. Fabrizio mentioned that the core value 'everyone can win' might be (also) 'everyone wins', because of the fact that even the ones who do not receive a prize can still be a winner health-wise.

Marcel asks about the choice for iOS or Android, where the GameBus team chooses android, Fabrizio tells us that ZuidZorg will probably choose for iOS due to its simplicity. Nurses shouldn't have a lot of options on their devices is their opinion. As a user-centered view iOS is their best choice, where Android might be better from a developer's view.

Corporate customer
Fabrizio mentions that he does not see in the Corporate customer BASE/X model that this model is for corporations with a large client or employee account. He also wants to see the term 'healthy' in the value-in-use, since the activities will imply a healthier lifestyle.

Marcel explains his fear that clients might not use GameBus, but ZuidZorg should stimulate its clients to actively use this by rewarding them.

Marcel asks who pays this, ZuidZorg or the clients. Since the model is also focused on large companies, these often have a budget for preventive health and/or a corporate insurance. Marcel asks about these corporate insurances, if contact with insurances have been made since these have to be up to date about GameBus.

Fabrizio mentions that he foresees a decline of 'big' companies in the health care and more independent contractors. So the Corporate customer model will be in danger, however there might be corporations among these independent workers.

Fabrizio misses data in the radar, since he wants this data from their clients within their corporate subscription.

Fabrizio sees among the employees of ZuidZorg a decline of health, and ZuidZorg may pay for this group. However, clients is another story since they are not used to pay for anything. Optimally it will be incorporated in some form of subscription, such as ZuidZorg Extra. Since once they pay for something they will continue to pay.

The opportunity to pay only for non-active users receives positive response. Also Fabrizio

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threw in the idea of giving their employees or other users GameBus for free, in return they have to bring in, for example 2 or 3, other clients. Similar to the way Dropbox let users gain more storage by referring new users. Fabrizio mentions also that when medical (track and trace) apps could be connected, this would be very interesting. Also, games within apps are way more effective than just information. So Fabrizio might foresee in the future that these are important to inform patients.

**Freemium (Sponsor)**
Marcel correctly identifies free users as ambassadors. Since more users are important to create momentum and hopefully attract more users, of which small percentage will become premium users. Also premium users will become ambassadors for the premium version. Fabrizio compares this model to LinkedIn, which also has a premium option. The basic functionalities are still in the free version, but most added functionalities are placed in the premium version. Marcel mentions curiosity as a factor to upgrade. Fabrizio mentions laziness: people want to do all their stuff in one place. Fabrizio mentions that in the leader board data companies like Gazelle or Nike can see when to place an advertisement since they know after how many kilometers a bike or running shoes need replacement. However, this can only be when individual leader-boards are in place, not when the total points of a group are combined. Fabrizio might miss health as a benefit for the sponsors, however it is questionable if this is of use of the sponsors. Privacy is thrown in as an issue by Marcel, but Fabrizio replies that subscribing in challenges automatically gives consent to be in the leader-boards. Marketing/communication and the board should be convinced for GameBus to be implemented at ZuidZorg.

**Data (Corporate customer)**
Fabrizio thinks it is unfair that ZuidZorg pays for the subscription fee, maybe even for sponsorship and also for data. He thinks he has the right to use the data of their own employees/clients. He thinks it is, in the future, probably very important to improve their care. He agrees that he should pay for data outside their own company. If he should not pay for the GameBus itself, he will be more willing to pay for the data. But paying on both fronts is problematic. He even makes the statement that maybe Synergetics should pay to receive the data. He thinks that GameBus becomes to commercially focuses. If the subscription goes up, and free data analytics is involved, this has a different feel for Fabrizio. Fabrizio emphasizes that data will become (even more than now) big business. ZuidZorg has a lot of clients and thinks it is ridiculous that they should pay to get that data back.

**BASE/X**
Fabrizio mentions that the lines between the different actors could be thicker at cost/benefit and more transparent between Value Propositions between actors.
Introduction
Lynn works as a program manager health innovation. She is involved in projects regarding self-management, therefore it is connected to GameBus. Her job is to optimally facilitate/serve patients with applications, programs, information, knowledge to let them be self-sufficient to alleviate caregivers from work. CZ puts all these applications in context to the relation between patient and health care provider.

She does see a movement from care to prevention. However CZ does not pay the patients, but pay the health providers. If apps that facilitate this relation (such as a heartbeat monitor) are connected to GameBus this would be very useful. Lynn has some experience with such apps but she hears that the API integration is often a problem due to privacy matters and the (im)possibility to link data.

Lynn spoke with Pieter Van Gorp and Uzay Kaymak about the personal health record and the issue who owns your data. She likes the idea that the data becomes property of the user. The idea now is that there are many concerns about the ability of patients to manage/share their own data. Since these patients, chronic patients, are often with a low education level and the files are often full of jargon.

Lynn indicates that it is hard to make it transparent how healthy someone is living, on all aspects. GameBus could help (partially) with that by visually showing the (healthy) progress.

Corporate customer
Lynn indicates that there is more and more room for prevention in corporate insurances. Insurances have the roll in prevention, but insurers are having difficulties in doing so. This is partly due to the fact that this is a one sided agreement. Insured do not have the obligation to live healthy to become a client of CZ or getting a lower premium due to the structure in The Netherlands. Company health care is generally focused on prevention. Keeping employees healthy, active, discourage smoking. Lynn mentions the Dutch BRAVO [prevention] themes: Bewegen [exercise], Roken [smoking], Alcohol, Voeding [nutrition] & Ontspanning [relaxation]10. CZ keeps these themes in mind while discussing prevention.

Following is the question what requirements must be met by applications to be able to be considered by companies or in the negotiations about corporate insurance. Lynn believes, apart from some legal issues regarding products that handle with personal data/e-health between doctor and patient, there aren't really strict requirements. However Lynn sees more and more that applications where health information is exchanged (must) comply with (CE) certifications or (NEN) norms. At least within CZ, Lynn thinks there are no strict requirements yet. How GameBus could be considered within the negotiations is more

10 http://tools.nisb.nl/bravokompas (Dutch)
dependent on what both parties are aware of. Currently some companies buy programs regarding mental health, such as Psy Health Direct\textsuperscript{11} (focused on epilepsy) which offers programs such as Kleur je Leven\textsuperscript{12} [colour your life]. Lynn also mentions MijnGezondheidsPlatform\textsuperscript{13} [MyHealthPlatform], an online platform supporting self management with manual input and partly automated input through digital sources.

To its clients CZ offers as online tools such as a calorie counter and online coaches (dietary coach, exercise coach, mental coach).

CZ also offers various activities within their company, however these often stop after the pilot phase. A difficult point is that after the new fun phase is over, how to keep the users active.

Lynn mentions that CZ, and probably other companies, will only buy GameBus when it is proven that it will actually reduces costs. Lynn mentions that it will be difficult to get enough people to use the app to prove that this really is the case. Lynn agrees that getting (a lot of) users is essential in the first phase. CZ and other companies would probably be interested in GameBus if it really increases the health of their employees, and decreases sick days.

The way to get GameBus into an insurer like CZ or other companies could be through HR or Marketing & Sales of collective insurance.

**Freemium (Sponsor)**

Currently CZ doesn't do advertisement promoting specific types of health activities because of the question: “What is health?” One could define so many health attributes, it is different for everyone and often is a state of mind. However, times are changing and might happen in the future. Insurers cannot ask more money from old or sick patients, however CZ is investigating whether financial bonuses can be offered if people behave healthy over a set of time. Ethically this was difficult. But also the financial stimulus was also too low for most people to start exercising, since the target market is the old and the sick and not poor students who will exercise for a few euros less premium.

Lynn can envision some companies to be attracted to this kind of advertisement, since it can be shown as healthy company.

Lynn thinks people will choose their employer more and more based on the secondary benefits, looking at the popularity of Google. However this is more focused on the higher educated people. However this is more linked to the Corporate customer model.

**Data**

Lynn mentions the TED talk about E-patient Dave\textsuperscript{14}. He states that it is vital for patients to own and utilize their own data and share thoughts with similar patients. However the people who do this, and will do this (also: quantified self) will be limited. PatientsLikeMe is also an example of this movement. However general practitioners (GPs) believe this is tainted

\textsuperscript{11} https://psyhealthdirect.nl/ (Dutch)\textsuperscript{12} http://www.kleurjeleven.nl/ (Dutch) \textsuperscript{13} http://www.mijngezondheidsplatform.info/ (Dutch) \textsuperscript{14} http://www.ted.com/talks/dave_debronkart_meet_e_patient_dave
information. But also this is changing, GPs are nowadays 55-year old men, but in the academy most students are women, deciding together on the treatment.

A lot of people who come at the GP office have no real symptoms and need not much more than just the talk with the GP. This costs a lot of money for the system. Ideally this talk would be in a different setting, not with the GP but with neighbors or family.

For CZ it could be very interesting to get data from other sources than the health care provider. It could be so that in the future a patient who participates in healthy behavior pays less premium. Still legal matters is problematic. However, when the patients chooses to share this data, this could be done.

Data about healthy activity, BRAVO related, is interesting.

Budget for this preventive data is difficult because it is not really hard proven that certain types of prevention really reduces the costs, due to multi-factorial nature of 'health'. Not in the way that, for example, drop prevention has reduced hip surgeries for the insurer. However Lynn believes the way forward is towards this kind of prevention.

Respondent [7]
Who: Floor van der Heijden
Company: TU/e
When: May 13, 2015

Introduction
Floor is manager AMVS: Arbeidsomstandigheden [working conditions], milieu [environment], veiligheid [safety] en stralingsbescherming [radiation protection]. This is a department of DPO: Dienst Personeel en organisatie [Office of personnel and organization]. They work with 10-15 men, they are involved with the above four themes of AMVS TU/e broad. Every faculty also has their own AMVS advisor which falls under their own director. The main staff sets up a policy together with the faculty advisors, and also some centralized tasks for the TU/e. For example handling of signaled incidents, advising with new constructions such as Flux and Metaforum. Also involving the absenteeism of employees together with ARBO Unie, they work closely with company doctors, corporate social work, psychologist and a therapist at the Student Sports Centre. Health promotion and health stimulation are increasingly important. From absenteeism towards vitality policy prevention is a main concern.

Floor was previously involved in the mobility group of the TU/e, their goal was to stimulate going to the TU/e by other means of transport rather than the car. One of the results was paid parking, also for professors. Regarding this point, Floor mentions B-Rider\textsuperscript{15}, an initiative by the province Noord-Brabant where people can earn money for every kilometer they bike to work instead of driving by car. Over 2000 people are already making use of this initiative in Brabant. Floor has connections at B-rider that can be shared if necessary.

Corporate customer
Floor identifies three groups:
1. People who can and who want: Those maybe do not need GameBus, since they already use the fun apps like Strava and already compete against their friends. What should trigger them to install GameBus?
2. People who cannot and do not want: Those are often sick or old people, this is not the TU/e or corporate population but more a health care population.
3. People who can but do not want: This is an important group, also for TU/e. What triggers them to suddenly install GameBus and start using other apps.

Floor questions if a lot of people from group 3 have a smart phone, and if they have one do they use it for other things than making calls and maybe messaging.

Group 1 might be competitive and pull group 3 with them in the challenges, however this is mostly between youngsters (group 1) and elderly (group 3).

Floor again brings up B-rider, where people bike instead of taking the car. So if GameBus tries to achieve this, this is already in that program. Challenges like ‘walking lunch’ however are nice, but this should be part of the health program in total, it should be hung up to a greater program.

\textsuperscript{15} \url{http://www.b-riders.nl/} (Dutch)
Marcel Clerx is mentioned by Floor as an important figure. He has ties to ZuidZorg and is setting up a bike sharing system\footnote{http://www.urbanwheelzcenter.nl/nl/69/Fietsdeelsystemen.aspx (Dutch)}. She thinks maybe GameBus could be linked to this. Employees of TU/e are often required to travel outside of the campus: High Tech Campus, Philips, Strijp etc. Most grab the car, since this is most convenient and they do not have a bike ready. With this sharing system it could be possible.

In order to make the TU/e pay for GameBus there should be a concrete plan with objectives, interests, planning, yield etc. and this can be submitted at the board of directors and then maybe get some funds.

In this stage of GameBus Floor does not think any funds can be promised, to do so there must be an elaborate plan of action.

**Freemium (Sponsor)**

This model was very clear. Floor likes this idea of sponsorship. It is more approachable and concrete than the Corporate customer model and therefore more feasible. It could also be used as promotion in addition to a larger goal, such as the B-rider. Also, for example, with the introduction week it could be a nice addition. TU/e also want to be part of Eindhoven, to let people know what is going on at the campus. The Green Strip is an example, and more and more activities in the evening. If this is the angle GameBus has, Communications Expertise Center is the place to promote the app. Floor sees this as a chance for GameBus, especially at specific times in the year. Besides the Introduction days, also Experience Days or festivities. Floor sees this as more promising since it reaches a bigger audience.

Floor thinks that bottom-up, when a lot of freemium users are available, the TU/e will be more eager to invest in this since a lot of people already use it. If it should be 'forced' upon the employees it is more likely to fail.

**BASE/X**

Floor identifies the Freemium/Sponsor radar more clear and concrete due to the fact that she does not have to think herself about what kind of corporate customer the TU/e is.

Floor thinks it is wise that there are not too specific 'cost/benefits' points at the Corporate customer.

Some sponsors might also benefit from healthier clients, for example a part of the group they target is part of the TU/e/ society, or will become (when targeting high schoolers).

After explaining the BASE/X structure the grades remain the same due to the background of Floor (change management).

Floor thinks it is necessary that the model is explained before, otherwise the model is of less use.

Floor dislikes the small overview at the bottom so suggests to maybe incorporated it in the radar. Also the co-creation part is from and for everyone so this could be visualized more.
B2B Stakeholder Interview 6 (Petrazzuolo & Saponara, 2015)

Respondent [9]
Who: Claudio Petrazzuolo & Filippo Saponara (Validated by Gianluca De Petris)
Company: Telecom Italia
When: June 19, 2015

Introduction
Claudio is a telecommunication engineer at TI, Pisa for 2 years. He is dealing with health and well-being, therefore he is working on Cognitive Games (CogGames) within TI. Filippo is also working at TI as an engineer in the TI Lab in Pisa, he is an Android developer. In this setting however they are speaking on behalf of Telecom Italia.

Corporate customer
Claudio likes the idea to see TI as a company with employees who can use GameBus. It can be used to improve the well-being of the employees and they can win rewards through the app. They see the aspect of team building much more important than the health & well-being part of GameBus. This way people can be reach that will not commit otherwise. For the clients it's just an application. Claudio has doubts about the potential to link the app to clients of TI. The leverage in terms of how the employees can be encouraged is an important factor to whether TI will invest in GameBus. If the objective and goal is clear than they probably will consider this as an opportunity. For PhDs and new/young employees there is already a program where events are organized for team building and keeping them happy at TI where a lot of money is spend. However a general health/well-being program is not available. Claudio mentions that for Italians health and/or well-being is not a big factor nowadays. However team building and relationships are very important in the Italian 'family'-culture: “The concept of family is very important”. Claudio confirms that GameBus should be marketed more as a team building app instead of a health app in Italy.

Freemium (sponsor)
Since Claudio and Filippo already answered questions about this model this is recognized. However this time from a point of TI instead of CogGames. Claudio thinks TI is open to this kind of collaboration to advertise TI.

Data
Claudio mentions that there should be a lot of users before this could be useful. However we assume this is the case. In Italy privacy is (also) very important. So definitely giving consent is very important. Claudio thinks it is important that Synergetics has the ability to do data mining, data fusion (for example). And they could sell it to third party such as a society of statistics who can ask for number of hours of gaming in Europe and make comparisons. TI could also be interested to buy data. TI is now focusing on games, for TI it could be useful to detect what kind of games are popular in different regions of Italy. What kind of games do they play where? This can be used to set different prices, marketing expenditure or promotions. TI would be willing to pay for this. Budget is currently not (much) available. However in the future this could change.

Other
Free access to the game(Bus) is a must nowadays, to get a feeling about the game. This could
also be used for the data business model. Also gaining critical mass is very important for an app such as GameBus so they should achieve a high number of users, otherwise the app and the business models will fail.

**BASE/X**
In Italy 'team building' will be a benefit instead of health benefits for TI as a corporate client. Brand visibility is a very important factor according to Claudio. The Data radar is not very clear to Claudio and Filippo. There is no obvious association between the personal data the user gives to the corporation, and the role the service provider offers. What transactions are taking place between who and what is transferred? Also the users do not really 'lose' their personal data since they can still manage it, and transfer it to other corporations.
W) Game suppliers reactions

Respondent [10]
Who: Claudio Petrazzuolo & Filippo Saponara
Game supplier: CogGames

Freemium Upgrading
1. Do you think free users will upgrade several specific parts of the application, but not upgrade to premium? Why?

It depends on specific features and price of premium i.e. on the perceived ratio for the user of costs/benefits.

2. Would you consider paying to give discount for the users, or even offering it to them for free? If yes; what use do you see in the extra users of your service? If not; why?

We would consider a revenue share of the discount (e.g. if the app cost 10, GameBus offer it for 9 but we get 8. We would not offer the app for free to GameBus, because we do not have collateral revenue streams from the app (e.g. big data collection and analysis). Free extra users of the service would not be any benefit for us.

3. What would be your reasons to connect to GameBus?
Extra revenues, visibility, added values

Please take a look at the BASE/X framework, in this case consider yourself the 'game supplier' and answer the following questions:

1. (Regarding the actor: Game Supplier:) Are there costs or benefits you are missing or think should be removed?

If we consider a game supplier accepting to pay to GameBus a one-time fee to enter the business then an additional cost should be considered for the Game supplier.

2. Do you think your 'game' can add more regarding co-creation activities?

All personal data collected during registration to the GameBus platform should be shared with the game supplier

Freemium Sponsorship

1. Would you consider becoming a sponsor? Why (not)?

TIM may be a sponsor to increase our reputation as a company caring about users’ health

2. Would you like to create your own challenge or choose from a set of given challenges?

As a big company, we would like to be able to create our own challenge even if the cost is higher
3. What kind of challenge would you construct/choose?

TIM HEALTH CHALLENGE with a tablet and 1 year subscription as a price.

4. Do you see benefit in seeing the leader-boards?

The leader-board is necessary if you want to create a challenge. It has to be decided what kind of leader-boards you plan to create (e.g. single user, single family, single category, single game)

5. Do you like the idea of credits or would you prefer paying per challenge or a subscription? Why?

We would not see a big difference in buying credits or buying specific challenges

Please take a look at the BASE/X framework, in this case consider yourself the 'sponsor' and answer the following questions:

1. (Regarding the actor: Sponsor:) Are there costs or benefits you are missing or think should be removed?

Ok like this.

Furthermore I would like you to fill in the table on the next page regarding the two BASE/X frameworks.

2. What would be your suggestions to make this radar better?

If Appendix A and Appendix B represent two different Business Model, the roles of Free Users Upgrading User and Premium User should be present in both appendixes. If Appendix A and B are two different aspects of the same Business Model this should be clarified.
Who: Iris Soute
Game supplier: HeadUp Games

Freemium Upgrading
1. Do you think free users will upgrade several specific parts of the application, but not upgrade to premium? Why?
No. There is no gain in offering GameBus to their customers.

2. Would you consider paying to give discount for the users, or even offering it to them for free? If yes; what use do you see in the extra users of your service? If not; why?
No.

3. What would be your reasons to connect to GameBus?
At the moment there are no reasons for Head Up Games to connect to GameBus. It could become relevant if one of our customers would require it, but we do not foresee that in the immediate future

Please take a look at the BASE/X framework, in this case consider yourself the 'game supplier' and answer the following questions:

1. (Regarding the actor: Game Supplier:) Are there costs or benefits you are missing or think should be removed?
N/a for us (see answer above).

2. Do you think your 'game' can add more regarding co-creation activities?
Idem

Freemium Sponsorship
1. Would you consider becoming a sponsor? Why (not)?
No. See above

2. Would you like to create your own challenge or choose from a set of given challenges?
No.

3. What kind of challenge would you construct/choose?
-

4. Do you see benefit in seeing the leader-boards?
No.
5. Do you like the idea of credits or would you prefer paying per challenge or a subscription? Why?

No idea

Please take a look at the BASE/X framework, in this case consider yourself the 'sponsor' and answer the following questions:

1. (Regarding the actor: Sponsor:) Are there costs or benefits you are missing or think should be removed?

Furthermore I would like you to fill in the table on the next page regarding the two BASE/X frameworks.

2. What would be your suggestions to make this radar better?

-
Respondent [12]
Who: Franca Delmastro
Game supplier: Cameo

Freemium Upgrading
1. Do you think free users will upgrade several specific parts of the application, but not upgrade to premium? Why?

If the apps are already paying apps, the user would like to continue upgrading the single apps, looking at GameBus as an additional component of those apps. I think that Games suppliers should pay a GameBus license to manage the gaming experience involving their apps, and the payment of GameBus should be transparent to the final user.

2. Would you consider paying to give discount for the users, or even offering it to them for free? If yes; what use do you see in the extra users of your service? If not; why?

3. What would be your reasons to connect to GameBus?

The main reason for a game to connect to GameBus I think is the access to all the collected data to further personalize its own features and make it more appealing for the final user.

Please take a look at the BASE/X framework, in this case consider yourself the ‘game supplier’ and answer the following questions:

1. (Regarding the actor: Game Supplier:) Are there costs or benefits you are missing or think should be removed?

I don't agree with the app discount.

2. Do you think your 'game' can add more regarding co-creation activities?

I don't know if I correctly understood your question, but the social monitoring tool could add possible new social interactions among users running GameBus, even not belonging to the same team.

Freemium Sponsorship

1. Would you consider becoming a sponsor? Why (not)?

No. I think that for the social inclusion part the healthcare association should be the sponsor (e.g., ZuidZorg).

2. Would you like to create your own challenge or choose from a set of given challenges?

we can do both.

3. What kind of challenge would you construct/choose?
4. Do you see benefit in seeing the leader-boards?

I did not understand the question.

5. Do you like the idea of credits or would you prefer paying per challenge or a subscription? Why?

I think that money are more attractive for the users but I also agree with the chose of credits.

*Please take a look at the BASE/X framework, in this case consider yourself the 'sponsor' and answer the following questions:*

1. (Regarding the actor: Sponsor:) Are there costs or benefits you are missing or think should be removed?

   No.

   Furthermore I would like you to fill in the table on the next page regarding the two BASE/X frameworks.

2. What would be your suggestions to make this radar better?

   -
X) Codes-quotations list

Code: Advertising {14-0}

P 1: Pieter Van Gorp - 1:2 [Here, nice rewards can be earn..] (1:490-1:562) (PPM Brouwers)
Codes: [Advertising - Family: Revenue]

Here, nice rewards can be earned and this is also a marketing instrument,

P 3: Andrea Cuoghi - 3:4 [He thinks GameBus is ideal to ..] (1:779-1:876) (PPM Brouwers)
Codes: [Advertising - Family: Revenue]

He thinks GameBus is ideal to promote a new product. This would go more towards the sponsorship.

Codes: [Advertising - Family: Revenue]

Respondent [5a] doesn't know if the insurer will be interested in becoming a sponsor. It hasn't been done in the past.

Codes: [Advertising - Family: Revenue] [Weakness - Family: SWOT]

However attracting new customers or giving discount to existing customers who are higher in a ranking might come of in a wrong way from a PR point.

Codes: [Advertising - Family: Revenue] [B2B Market - Family: Target market]

Respondent [5a] mentions that companies like Nike, Gazelle, Adidas are more likely to be charmed by this.

Codes: [Advertising - Family: Revenue]

Fabrizio mentions that in the leader board data companies like Gazelle or Nike can see when to place an advertisement since they know after how many kilometres a bike or running shoes need replacement. However, this can only be when individual leaderboards are in place, not when the total points of a group are combined.

P 8: Lynn Rulkens - 8:10 [How GameBus could be considere..] (1:2839-1:2947) (PPM Brouwers)
Codes: [Advertising - Family: Revenue]

How GameBus could be considered within the negotiations is more dependent on what both parties are aware of

P 8: Lynn Rulkens - 8:15 [Currently CZ doesn't do advert..] (2:960-2:1192) (PPM Brouwers)
Codes: [Advertising - Family: Revenue]

Currently CZ doesn't do advertisement promoting specific types of health activities because of the question: "What is health?" One could define so many health attributes, it is different for everyone and often is a state of mind.

P 8: Lynn Rulkens - 8:16 [However, times are changing an..] (2:1194-2:1252) (PPM Brouwers)
Codes: [Advertising - Family: Revenue] [Opportunity - Family: SWOT]

However, times are changing and might happen in the future.

P 8: Lynn Rulkens - 8:17 [Insurers cannot ask more money..] (2:1254-2:1428) (PPM Brouwers)
Insurers cannot ask more money from old or sick patients, however CZ is investigating whether financial bonuses can be offered if people behave healthy over a set of time.

P 8: Lynn Rulkens - 8:19 [Lynn can envision some compani..] (2:1669-2:1788) (PPM Brouwers)

Lynn can envision some companies to be attracted to this kind of advertisement, since it can shown as healthy company.

P 9: Claudio Petrazzuolo & Filippo Saponara - 9:10 [Claudio thinks TI is open to t..] (1:1995-1:2068) (PPM Brouwers)

Claudio thinks TI is open to this kind of collaboration to advertise TI.

P 10: Cameo - 10:6 [No. I think that for the socia..] (1:1547-1:1661) (PPM Brouwers)

No. I think that for the social inclusion part the healthcare association should be the sponsor (e.g., ZuidZorg).

P 11: CogGames - 11:7 [TIM may be a sponsor to increa..] (1:1558-1:1644) (PPM Brouwers)

TIM may be a sponsor to increase our reputation as a company caring about users' health.

Code: B2B Market {34-0}

P 1: Pieter Van Gorp - 1:1 [Corporate customers can re-use..] (1:374-1:488) (PPM Brouwers)

Corporate customers can re-use the challenges made by the individual users (link between corporate and community).

P 1: Pieter Van Gorp - 1:4 [Furthermore Pieter wants to kn..] (1:966-1:1532) (PPM Brouwers)

Furthermore Pieter wants to know if they should pay Synergetics beforehand, with the risk that 70% of the users will not use the product. How can we invoice this properly, when a code is given to a client but not used. Perhaps pay in advance, but receiving this back after x-days of no activation. Pieter thinks the best option to solve this by letting these details be handled in negotiations between GameBus (Synergetics) and corporations (such as ZuidZorg) by account managers, sales employees or similar.

P 1: Pieter Van Gorp - 1:6 [Home care organizations such a..] (1:1704-1:1876) (PPM Brouwers)

Home care organizations such as ZuidZorg, but also Archipel, Lunet are (potential) target customers. This is because they have budget to innovate, or at least do projects.

P 1: Pieter Van Gorp - 1:7 [In Italy Pieter believed this ..] (1:2018-1:2268) (PPM Brouwers)

In Italy Pieter believed this is more government centralized in these home care organizations, with a fixed budget and no room for financing such projects as GameBus. In Italy it would be wiser to go straight to provincial or national governments.

P 1: Pieter Van Gorp - 1:8 [Telecommunication companies wa..] (1:2272-1:2400) (PPM Brouwers)
Telecommunication companies was a second target customer Pieter suggested to reach the end-user directly in markets like Italy.

P 1: Pieter Van Gorp - 1:11 [Telecommunication provider mig..] (1:2660-1:2768) (PPM Brouwers)
Codes: [B2B Market - Family: Target market]
Telecommunication provider might be to broad, might be better mobile phone provider (in the example of TI).

Codes: [B2B Market - Family: Target market] [Dutch Market - Family: Target market]
But in the region Eindhoven, Fabrizio mentioned there are broadband organizations that install internet. With these companies GameBus could bypass the big companies such as KPN, and add internet to the GameBus package (besides the app/service).

Codes: [B2B Market - Family: Target market] [Selling Data - Family: Revenue]
Data-wise corporate customers can only see the leader-boards. Where individual activities are placed at the individuals themselves. If corporaions want specific activities to be monitored they should create a specific challenge.

P 1: Pieter Van Gorp - 1:16 [For 2016 there should be more ..] (2:245-2:357) (PPM Brouwers)
Codes: [B2B Market - Family: Target market]
For 2016 there should be more possible corporate customers identified, such as sports clubs and municipalities.

P 2: Luk Vervenne - 2:7 [Other target customers are in ..] (1:1865-1:2017) (PPM Brouwers)
Codes: [B2B Market - Family: Target market] [Dutch Market - Family: Target market] [Opportunity - Family: SWOT] [Value]
Other target customers are in the field of social reintegration. The municipalities are responsible for this kind of care, and the costs should be low.

P 3: Andrea Cuoghi - 3:1 [In Italy, care providers have ..] (1:326-1:395) (PPM Brouwers)
Codes: [B2B Market - Family: Target market] [Italian Market - Family: Target market]
In Italy, care providers have a 5-year contract with the government.

P 5: Respondent [5] - 5:3 [Also projects are running with..] (1:1461-1:1584) (PPM Brouwers)
Codes: [B2B Market - Family: Target market] [Dutch Market - Family: Target market]
Also projects are running with municipalities about indexed preventive care, that falls within the healthcare regulations.

Codes: [B2B Market - Family: Target market] [B2C Market - Family: Target market]
Both think home care organisations might not even be a right target market to begin with, they believe focussing more on the consumer market is more feasible.

P 5: Respondent [5] - 5:8 [However, if home care are orga..] (1:2403-1:2583) (PPM Brouwers)
Codes: [B2B Market - Family: Target market] [Value]
However, if home care are organisations decide to pick up such a application it is only good. It can be an addition to the care provided, since the elderly will have more to do.

Codes: [B2B Market - Family: Target market]
Respondent [5a] thinks it's purely HR policy if the insurer will invest in an application such as GameBus. Currently they do not have any similar projects running. However, HR is searching for methods to keep their employees healthy and active.


Respondent [5b] mentions that at the insurer the contracts between the insurer and companies with respect to collective insurance is handled by the Commerce department. In these contract negotiations the companies specify what topics they want to focus on. Topics such as preventive care, sustainable employability are most of the time part of the agenda. With these topics in mind, suitable interventions are looked for that can address these. Most time of the insurer is in preparation and monitoring of these projects.


Respondent [5a] believes that it is easier to promote GameBus directly at large companies than through an insurer, and then they can address it in the negotiations at the insurer or they can take care of it themselves. the insurer can then sometimes help in the implementation, however this is only done with a couple of really big companies.


Respondent [5a] mentions that companies like Nike, Gazelle, Adidas are more likely to be charmed by this.

P 6: Fabrizio Greidanus & Marcel Hulsen - 6:7 [Fabrizio sees among the employ..] (1:2690-1:2794) (PPM Brouwers)

Fabrizio sees among the employees of ZuidZorg a decline of health, and ZuidZorg may pay for this group.

P 6: Fabrizio Greidanus & Marcel Hulsen - 6:9 [Optimally it will be incorpora..] (1:2875-1:2963) (PPM Brouwers)

Optimally it will be incorporated in some form of subscription, such as ZuidZorg Extra.


Marketing/communication and the board should be convinced for GameBus to be implemented at ZuidZorg.

P 6: Fabrizio Greidanus & Marcel Hulsen - 6:16 [Fabrizio thinks it is unfair t..] (2:1358-2:1553) (PPM Brouwers)

Fabrizio thinks it is unfair that ZuidZorg pays for the subscription fee, maybe even for sponsorship and also for data. He thinks he has the right to use the data of their own employees/clients.

P 8: Lynn Rulkens - 8:7 [Company health care is general..] (1:1952-1:2278) (PPM Brouwers)

Company health care is generally focused on prevention. Keeping employees healthy, active, discourage smoking. Lynn mentions the Dutch BRAVO [prevention] themes: Bewegen [exercise], Roken [smoking], Alcohol,
The way to get GameBus into an insurer like CZ or other companies could be through HR or Marketing & Sales of collective insurance.

But also the financial stimulus was also too low for most people to start exercising, since the target market is the old and the sick and not poor students who will exercise for a few euros less premium.

Lynn thinks people will choose their employer more and more based on the secondary benefits, looking at the popularity of Google. However this is more focused on the higher educated people.

Claudio likes the idea to see TI as a company with employees who can use GameBus. It can be used to improve the well-being of the employees and they can win rewards through the app.

For the clients it's just an application

Claudio has doubts about the potential to link the app to clients of TI.

The leverage in terms of how the employees can be encouraged is an important factor to whether TI will invest in GameBus. If the objective and goal is clear than they probably will consider this as an opportunity.

No. I think that for the social inclusion part the healthcare association should be the sponsor (e.g., ZuidZorg).

If we consider a game supplier accepting to pay to GameBus a one-time fee to enter the business then an
additional cost should be considered for the Game supplier

P11: CogGames - 11:8 [As a big company, we would lik..] (1:1738-1:1834) (PPM Brouwers)
Codes: [B2B Market - Family: Target market]
As a big company, we would like to be able to create our own challenge even if the cost is higher

Code: B2C Market {9-0}

P 1: Pieter Van Gorp - 1:3 [with the community this is pro..] (1:574-1:681) (PPM Brouwers)
Codes: [B2C Market - Family: Target market]
with the community this is protected because you do not want arbitrary people joining your only challenge.

P 1: Pieter Van Gorp - 1:9 [Where families with enough mon..] (1:2402-1:2564) (PPM Brouwers)
Codes: [B2C Market - Family: Target market] [Italian Market - Family: Target market]
Where families with enough money (or at least one member) can buy GameBus for the whole family, such as a 40-50 year old male with children and (living) parents.

P 1: Pieter Van Gorp - 1:13 [One or two users are ideal for..] (1:3181-1:3396) (PPM Brouwers)
Codes: [B2C Market - Family: Target market]
One or two users are ideal for people who are not in a bigger family primary circle, but want to join. For example your friends have GameBus through their family, but you want to join their GameBus friends group.

P 1: Pieter Van Gorp - 1:21 [To trigger users to use GameBu..] (2:655-2:737) (PPM Brouwers)
Codes: [B2C Market - Family: Target market]
To trigger users to use GameBus and make challenges classic advertisement is key.

P 2: Luk Vervenne - 2:8 [A middle-aged man (40-50) who ..] (1:2125-1:2293) (PPM Brouwers)
Codes: [B2C Market - Family: Target market]
A middle-aged man (40-50) who wants to work on the health of the family or a supporting counselor (this would go more to corporate customer) who comes with the idea.

P 2: Luk Vervenne - 2:9 [But also youngsters could init..] (1:2295-1:2447) (PPM Brouwers)
Codes: [B2C Market - Family: Target market]
But also youngsters could initiate this type of care, since they might see health problems in their family. Eventually the young will help the elder.

P 3: Andrea Cuoghi - 3:6 [Andrea thinks the most viable ..] (1:998-1:1128) (PPM Brouwers)
Codes: [B2C Market - Family: Target market]
Andrea thinks the most viable target group will be middle-aged (parents): 30-50 years old, who are familiar with sports and apps.

P 3: Andrea Cuoghi - 3:10 [Cross fitting as a target grou..] (1:1662-1:1821) (PPM Brouwers)
Codes: [B2C Market - Family: Target market] [Italian Market - Family: Target market]
Cross fitting as a target group is not really viable, but activities like natural tracking, hiking, mountain climbing are more normal in that region of Italy.

Codes: [B2B Market - Family: Target market] [B2C Market - Family: Target market]
Both think home care organisations might not even be a right target market to begin with, they believe focussing more on the consumer market is more feasible.
Luk does not see the benefit of the round shape of the radar. He prefers seeing this in a spreadsheet.

Partially because the text is not horizontally aligned at the sides of the radar.

Luk identifies the radar as a taxonomy, useful for brainstorming and filling these radars in.

Luk prefers the joined Free+premium user as to the split up radars (2 separate radars for free and premium).

It took Andrea a while to understand the radar.

He prefers the joined Free+Premium radar.

Respondent [4] thinks it is a bit suggestive that something is missing by leaving two parts empty.

Fabrizio mentions that he does not see in the Corporate Customer BASE/X model that this model is for corporations with a large client or employee account.

He also wants to see the term 'healthy' in the value-in-use, since the activities will imply a healthier lifestyle.

Fabrizio mentions that the lines between the different actors could be thicker at cost/benefit and more transparent between Value Propositions between actors.

Fabrizio might miss health as well as a bit suggestive that something is missing by leaving two parts empty.
Fabrizio might miss health as a benefit for the sponsors, however it is questionable if this is of use of the sponsors.

P 7: Floor van der Heijden - 7:12 [Floor identifies the Freemium/..] (2:1331-2:1506) (PPM Brouwers)
Codes: [BASE/X]
Floor identifies the Freemium/Sponsor radar more clear and concrete due to the fact that she does not have to think herself about what kind of corporate customer the TU/e is.

P 7: Floor van der Heijden - 7:13 [Floor thinks it is wise that t..] (2:1509-2:1613) (PPM Brouwers)
Codes: [BASE/X]
Floor thinks it is wise that there are not too specific 'cost/benefits' points at the corporate customer.

P 7: Floor van der Heijden - 7:14 [Some sponsors might also benef..] (2:1616-2:1795) (PPM Brouwers)
Codes: [BASE/X]
Some sponsors might also benefit from healthier clients, for example a part of the group they target is part of the TU/e/ society, or will become (when targeting high schoolers).

P 7: Floor van der Heijden - 7:15 [Floor thinks it is necessary t..] (2:1918-2:2017) (PPM Brouwers)
Codes: [BASE/X]
Floor thinks it is necessary that the model is explained before, otherwise the model is of less use.

P 7: Floor van der Heijden - 7:16 [Floor dislikes the small overv..] (2:2020-2:2117) (PPM Brouwers)
Codes: [BASE/X]
Floor dislikes the small overview at the bottom so suggests to maybe incorporated it in the radar.

P 7: Floor van der Heijden - 7:17 [Also the co-creation part is f..] (2:2121-2:2203) (PPM Brouwers)
Codes: [BASE/X]
Also the co-creation part is from and for everyone so this could be visualized more

P 9: Claudio Petrazzuolo & Filippo Saponara - 9:20 [In Italy 'team building' will ..] (1:3291-1:3389) (PPM Brouwers)
Codes: [BASE/X]
In Italy 'team building' will be a benefit instead of health benefits for TI as a corporate client.

P 9: Claudio Petrazzuolo & Filippo Saponara - 9:21 [Brand visibility is a very imp..] (1:3391-1:3457) (PPM Brouwers)
Codes: [BASE/X]
Brand visibility is a very important factor according to Claudio.

P 9: Claudio Petrazzuolo & Filippo Saponara - 9:22 [The Data radar is not very cle..] (2:1-2:266) (PPM Brouwers)
Codes: [BASE/X]
The Data radar is not very clear to Claudio and Filippo. There is no obvious association between the personal data the user gives to the corporation, and the role the service provider offers. What transactions are taking place between who and what is transferred?

P 9: Claudio Petrazzuolo & Filippo Saponara - 9:23 [Also the users do not really '..] (2:268-2:393) (PPM Brouwers)
Also the users do not really 'lose' their personal data since they can still manage it, and transfer it to other corporations.

**P10: Cameo - 10:4 [I don't agree with the app dis..] (1:1160-1:1195) (PPM Brouwers)**

Codes: [BASE/X] [Free trial (Freemium) - Family: Revenue]

I don't agree with the app discount.

**P11: CogGames - 11:6 [If we consider a game supplier..] (1:1124-1:1287) (PPM Brouwers)**

Codes: [B2B Market - Family: Target market] [BASE/X]

If we consider a game supplier accepting to pay to GameBus a one-time fee to enter the business then an additional cost should be considered for the Game supplier.

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**Code: Dutch Market [8-0]**


Codes: [B2B Market - Family: Target market] [Dutch Market - Family: Target market]

But in the region Eindhoven, Fabrizio mentioned there are broadband organizations that install internet. With these companies GameBus could bypass the big companies such as KPN, and add internet to the GameBus package (besides the app/service).

**P 2: Luk Vervenne - 2:7 [Other target customers are in ..] (1:1865-1:2017) (PPM Brouwers)**

Codes: [B2B Market - Family: Target market] [Dutch Market - Family: Target market] [Opportunity - Family: SWOT] [Value]

Other target customers are in the field of social reintegration. The municipalities are responsible for this kind of care, and the costs should be low.

**P 5: Respondent [5] - 5:3 [Also projects are running with..] (1:1461-1:1584) (PPM Brouwers)**

Codes: [B2B Market - Family: Target market] [Dutch Market - Family: Target market]

Also projects are running with municipalities about indexed preventive care, that falls within the healthcare regulations.


Codes: [Dutch Market - Family: Target market]

However the selective prevention, i.e. triggering people to live healthier is always difficult. Is the responsibility for the WMO or insured care.


Codes: [B2B Market - Family: Target market] [Dutch Market - Family: Target market]

Respondent [5b] mentions that at the insurer the contracts between the insurer and companies with respect to collective insurance is handled by the Commerce department. In these contract negotiations the companies specify what topics they want to focus on. Topics such as preventive care, sustainable employability are most of the time part of the agenda. With these topics in mind, suitable interventions are looked for that can address these. Most time of the insurer is in preparation and monitoring of these projects.


Codes: [B2B Market - Family: Target market] [Dutch Market - Family: Target market]

Respondent [5a] believes that it is easier to promote GameBus directly at large companies than through an insurer, and then they can address it in the negotiations at the insurer or they can take care of it themselves. the
insurer can then sometimes help in the implementation, however this is only done with a couple of really big companies.

Codes: [Dutch Market - Family: Target market]

Since in The Netherlands is a welfare state and solidarity is important everybody should be treated 'equally'

P 8: Lynn Rulkens - 8:17 [Insurers cannot ask more money..] (2:1254-2:1428) (PPM Brouwers)
Codes: [Advertising - Family: Revenue] [Dutch Market - Family: Target market]

Insurers cannot ask more money from old or sick patients, however CZ is investigating whether financial bonuses can be offered if people behave healthy over a set of time.

Code: Free trial (Freemium) {13-0}

P 1: Pieter Van Gorp - 1:18 [Free users will have added val..] (2:577-2:652) (PPM Brouwers)
Codes: [Free trial (Freemium) - Family: Revenue]

Free users will have added value by making cool challenges and word of mouth

P 1: Pieter Van Gorp - 1:19 [At the start apps will not com..] (2:450-2:574) (PPM Brouwers)
Codes: [Free trial (Freemium) - Family: Revenue]

At the start apps will not come to GameBus, but hopefully at a later stage they will, after some critical mass is achieved.

P 1: Pieter Van Gorp - 1:20 [When an app is big enough, wit..] (2:739-2:951) (PPM Brouwers)
Codes: [Free trial (Freemium) - Family: Revenue]

When an app is big enough, with enough users, there will be some users who will make those cool challenges. Like with Facebook where market-place-like pages were created, but only after it had a huge following

P 2: Luk Vervenne - 2:1 [Basically ticks are a utility ..] (1:595-1:842) (PPM Brouwers)
Codes: [Free trial (Freemium) - Family: Revenue] [Licensing - Family: Revenue]

Basically ticks are a utility based way of invoicing the data use. Every time something happens, a tick is happening. But for games and GameBus, subscription is a better choice. Tick fees can be taken care of by a (high enough) subscription fee.

Codes: [Free trial (Freemium) - Family: Revenue]

Marcel correctly identifies free users as ambassadors. Since more users are important to create momentum and hopefully attract more users, of which small percentage will become premium users. Also premium users will become ambassadors for the premium version.

P 6: Fabrizio Greidanus & Marcel Hulsen - 6:13 [Marcel mentions curiosity as a..] (2:490-2:616) (PPM Brouwers)
Codes: [Free trial (Freemium) - Family: Revenue] [Value]

Marcel mentions curiosity as a factor to upgrade. Fabrizio mentions laziness: people want to do all their stuff in one place.

P 9: Claudio Petrazzuolo & Filippo Saponara - 9:17 [Free access to the game(Bus) i..] (1:2969-1:3049) (PPM Brouwers)
Codes: [Free trial (Freemium) - Family: Revenue]
Free access to the game (Bus) is a must nowadays, to get a feeling about the game.

P10: Cameo - 10:1 [If the apps are already paying..] (1:146-1:303) (PPM Brouwers)
Codes: [Free trial (Freemium) - Family: Revenue]

If the apps are already paying apps, the user would like to continue upgrading the single apps, looking at GameBus as an additional component of those apps.

P10: Cameo - 10:4 [I don't agree with the app dis..] (1:1160-1:1195) (PPM Brouwers)
Codes: [BASE/X] [Free trial (Freemium) - Family: Revenue]

I don't agree with the app discount.

P11: CogGames - 11:1 [It depends on specific feature..] (1:149-1:261) (PPM Brouwers)
Codes: [Free trial (Freemium) - Family: Revenue]

It depends on specific features and price of premium i.e. on the perceived ratio for the user of costs/benefits

P11: CogGames - 11:2 [We would consider a revenue sh..] (1:443-1:556) (PPM Brouwers)
Codes: [Free trial (Freemium) - Family: Revenue]

We would consider a revenue share of the discount (e.g. if the app cost 10, GameBus offer it for 9 but we get 8.

P11: CogGames - 11:3 [We would not offer the app for..] (1:558-1:710) (PPM Brouwers)
Codes: [Free trial (Freemium) - Family: Revenue]

We would not offer the app for free to GameBus, because we do not have collateral revenue streams from the app (e.g. big data collection and analysis).

P11: CogGames - 11:4 [Free extra users of the servic..] (1:712-1:777) (PPM Brouwers)
Codes: [Free trial (Freemium) - Family: Revenue]

Free extra users of the service would not be any benefit for us.

______________________________________________________________________

Code: Italian Market {16-0}

P 1: Pieter Van Gorp - 1:7 [In Italy Pieter believed this ..] (1:2018-1:2268) (PPM Brouwers)
Codes: [B2B Market - Family: Target market] [Italian Market - Family: Target market]

In Italy Pieter believed this is more government centralized in these home care organizations, with a fixed budget and no room for financing such projects as GameBus. In Italy it would be wiser to go straight to provincial or national governments.

P 1: Pieter Van Gorp - 1:8 [Telecommunication companies wa..] (1:2272-1:2400) (PPM Brouwers)
Codes: [B2B Market - Family: Target market] [Italian Market - Family: Target market]

Telecommunication companies was a second target customer Pieter suggested to reach the end-user directly in markets like Italy.

P 1: Pieter Van Gorp - 1:9 [Where families with enough mon..] (1:2402-1:2564) (PPM Brouwers)
Codes: [B2C Market - Family: Target market] [Italian Market - Family: Target market]

Where families with enough money (or at least one member) can buy GameBus for the whole family, such as a 40-50 year old male with children and (living) parents.

P 3: Andrea Cuoghi - 3:1 [In Italy, care providers have ..] (1:326-1:395) (PPM Brouwers)
Codes: [B2B Market - Family: Target market] [Italian Market - Family: Target market]

In Italy, care providers have a 5-year contract with the government.
In Italy innovation is not a big factor in the public health system, but it could be a possibility. However, private organizations do not have this problem, but these have a lower client base.

Andrea thinks the most viable target group will be middle-aged (parents): 30-50 years old, who are familiar with sports and apps. Not much different than the Dutch target group.

Commitment: Andrea thinks Italians might be scared in a way, he can't really tell if it is viable.

Cross fitting as a target group is not really viable, but activities like natural tracking, hiking, mountain climbing are more normal in that region of Italy.

Giving away data is something new, but especially younger people are OK with this if they know where their data is going.

They see the aspect of team building much more important than the health & well-being part of GameBus.

For PhDs and new/young employees there is already a program where events are organized for team building and keeping them happy at TI where a lot of money is spend.

However a general health/well-being program is not available. Claudio mentions that for Italians health and/or well-being is not a big factor nowadays.

However team building and relationships are very important in the Italian 'family'-culture: "The concept of family is very important".

Claudio confirms that GameBus should be marketed more as a team building app instead of a health app in Italy.
Claudio thinks TI is open to this kind of collaboration to advertise TI.

In Italy privacy is (also) very important.

Furthermore Pieter wants to know if they should pay Synergetics beforehand, with the risk that 70% of the users will not use the product. How can we invoice this properly, when a code is given to a client but not used. Perhaps pay in advance, but receiving this back after x-days of no activation. Pieter thinks the best option to solve this by letting these details be handled in negotiations between GameBus (Synergetics) and corporations (such as ZuidZorg) by account managers, sales employees or similar.

Basically ticks are a utility based way of invoicing the data use. Every time something happens, a tick is happening. But for games and GameBus, subscription is a better choice. Tick fees can be taken care of by a (high enough) subscription fee.

Luk believes that the pricing strategy with volume licensing, where a higher discount is given if more subscriptions are bought, upgrades the offer. Where people buy a large-as-possible package, because this is more attractive. More users creates up-selling, because they will possibly buy new/more expensive packages.

Fabrizio thinks it is unfair that ZuidZorg pays for the subscription fee, maybe even for sponsorship and also for data. He thinks he has the right to use the data of their own employees/clients.

If the subscription goes up, and free data analytics is involved, this has a different feel for Fabrizio.

I think that Games suppliers should pay a GameBus license to manage the gaming experience involving their apps, and the payment of GameBus should be transparent to the final user.
Home care organizations such as ZuidZorg, but also Archipel, Lunet are (potential) target customers. This is because they have budget to innovate, or at least do projects.

These will change from provider from time to time and will want to try out something new.

There should be an incentive to buy a larger family pack, as Pieter mentioned that a pack of 10 persons would be a lot cheaper (per person) than a pack of 4.

Pieter does not see apps like Strava to pay Synergetics, but other apps might.

Other target customers are in the field of social reintegration. The municipalities are responsible for this kind of care, and the costs should be low.

Luk shows a more detailed view of health, not only physical, cognitive and social. This could be enriched within GameBus to give a more medical oriented overview.

Luk suggests that users can identify what kind of challenges they want from what kind of sponsors. This way challenges can be targeted at the right users.

Luk suggests some sort of meta-game among different games or challenges and if you lack some points somewhere or have a lot of points outside of these specific games you could upgrade your points to change form or sell/buy it.

Andrea sees a lot of potential in the more private companies, such as TI. He sees little limits from the types of corporations, also more local companies such as museums or cinemas.

Andrea thinks it is a good option to give discount when there are more people in your group, like Netflix.
If the user base is large enough, wearables and apps will be open to promoting within GameBus (to upgrading users). Andrea likes to see some sort of marketplace where new apps can be displayed, game suppliers might have to pay for this exposure.


For specific research projects there could be around €1000 available. Maybe €10.000 at most.


Respondent [4] thinks it might help giving free data analyses at first, and downgrading it after (f.e.) a year. However when money should be spent, the school will (again) evaluate if this is worth the costs.


Maybe some of these preventive care options will become part of the package.


Respondent [5a] states that if it will be reimbursed that somewhere it has to be proven that it reduces costs somewhere down the line. That means that clients of the insurer will go to the hospital less, need less home care, become generally less ill. When this is identified en researched, there is a good base for requesting funds for this application. It is hard to prove. Respondent [5b] also mentions that it is a long-term process, and therefore difficult also in safeguarding the project.


HR is searching for methods to keep their employees healthy and active.


Respondent [5a] also speaks about questionnaires that can be filled in to get money.

**P 6: Fabrizio Greidanus & Marcel Hulsen - 6:6 [however there might be corpora..] (1:2498-1:2567) (PPM Brouwers)**

however there might be corporations among these independent workers.

**P 7: Floor van der Heijden - 7:3 [Employees of TU/e are often re..] (1:3043-1:3287) (PPM Brouwers)**

Employees of TU/e are often required to travel outside of the campus: High Tech Campus, Philips, Strijp etc. Most grab the car, since this is most convenient and they do not have a bike ready. With this sharing system it could be possible.

**P 7: Floor van der Heijden - 7:10 [Floor thinks that bottom-up, w..] (2:1091-2:1248) (PPM Brouwers)**

Employees of TU/e are often required to travel outside of the campus: High Tech Campus, Philips, Strijp etc. Most grab the car, since this is most convenient and they do not have a bike ready. With this sharing system it could be possible.
Floor thinks that bottom-up, when a lot of freemium users are available, the TU/e will be more eager to invest in this since a lot of people already use it.

**P 8: Lynn Rulkens - 8:1 [She does see a movement from c..] (1:533-1:580) (PPM Brouwers)**
Codes: [Opportunity - Family: SWOT]

She does see a movement from care to prevention.

**P 8: Lynn Rulkens - 8:6 [Lynn indicates that there is m..] (1:1557-1:1950) (PPM Brouwers)**
Codes: [Opportunity - Family: SWOT]

Lynn indicates that there is more and more room for prevention in corporate insurances. Insurances have the roll in prevention, but insurers are having difficulties in doing so. This is partly due to the fact that this is a one sided agreement. Insured do not have the obligation to live healthy to become a client of CZ or getting a lower premium due to the structure in The Netherlands.

**P 8: Lynn Rulkens - 8:13 [CZ and other companies would p..] (2:659-2:801) (PPM Brouwers)**
Codes: [B2B Market - Family: Target market] [Opportunity - Family: SWOT]

CZ and other companies would probably be interested in GameBus if it really increases the health of their employees, and decreases sick days.

**P 8: Lynn Rulkens - 8:16 [However, times are changing an..] (2:1194-2:1252) (PPM Brouwers)**
Codes: [Advertising - Family: Revenue] [Opportunity - Family: SWOT]

However, times are changing and might happen in the future.

**P12: Head Up Games - 12:3 [It could become relevant if on..] (1:529-1:596) (PPM Brouwers)**
Codes: [Opportunity - Family: SWOT]

It could become relevant if one of our customers would require it,

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**Code: Reverse Utility {4-0}**

**P 2: Luk Vervenne - 2:13 [Luk asks what percentage is ta..] (1:3070-2:148) (PPM Brouwers)**
Codes: [Reverse Utility - Family: Revenue]

Luk asks what percentage is taken by GameBus. Luk agrees that this should be variable, since when a lot of people miss their target more money can be taken

Codes: [Reverse Utility - Family: Revenue]

About the thought of given GameBus for free with a minimum percentage of active users Respondent [5b] thinks 90% of active users to get GameBus for free is way too high.

Codes: [Reverse Utility - Family: Revenue]

However both Respondent [5a] and Respondent [5b] agree that this is a very interesting idea since it stimulates the use of GameBus and the FTEs required for stimulating their employees is earned back by the lower costs of the app

**P 6: Fabrizio Greidanus & Marcel Hulsen - 6:10 [The opportunity to pay only fo..] (1:3030-1:3347) (PPM Brouwers)**
Codes: [Reverse Utility - Family: Revenue]

The opportunity to pay only for non-active users receives positive response. Also Fabrizio threw in the idea of
giving their employees or other users GameBus for free, in return they have to bring in, for example 2 or 3, other clients. Similar to the way Dropbox let users gain more storage by referencing new users.

Code: Selling Data {29-0}

Codes: [B2B Market - Family: Target market] [Selling Data - Family: Revenue]

Data-wise corporate customers can only see the leader-boards. Where individual activities are placed at the individuals themselves. If corporations want specific activities to be monitored they should create a specific challenge.

P 2: Luk Vervenne - 2:14 [Luk believes that for many com..] (2:305-2:420) (PPM Brouwers)
Codes: [Selling Data - Family: Revenue]

Luk believes that for many companies it is not necessary to actually have the data, but only have the analytics.

P 2: Luk Vervenne - 2:15 [Luk thinks about in-app upgrad..] (2:682-2:995) (PPM Brouwers)
Codes: [Selling Data - Family: Revenue]

Luk thinks about in-app upgrades to receive consent for data use. However it could be difficult to implement this in the linked apps. However there is an agreement between apps and GameBus so such a feature could maybe be implemented in the future. Luk mentions the article about Kantara UMA (Brennan, 2015).

P 3: Andrea Cuoghi - 3:12 [Andrea does not know if compan..] (1:1954-1:2041) (PPM Brouwers)
Codes: [Selling Data - Family: Revenue]

Andrea does not know if companies will pay for data, depends on how rich this data is.

P 3: Andrea Cuoghi - 3:13 [Andrea does not know any speci..] (1:2045-1:2140) (PPM Brouwers)
Codes: [Selling Data - Family: Revenue]

Andrea does not know any specific points where money can be earned in other ways from this data.

Codes: [Selling Data - Family: Revenue]

A general answer to what kind of data is useful for TU/e cannot be given.

P 4: Respondent [4] - 4:3 [The data from GameBus could be..] (1:404-1:480) (PPM Brouwers)
Codes: [Selling Data - Family: Revenue] [Value]

The data from GameBus could be used to answer concrete questions in research,

Codes: [Selling Data - Family: Revenue] [Threat - Family: SWOT]

Budgetary, Respondent [4] thinks there is little to no money available for data collection.

Codes: [Opportunity - Family: SWOT] [Selling Data - Family: Revenue]

For specific research projects there could be around €1000 available. Maybe €10.000 at most.

Codes: [Selling Data - Family: Revenue] [Threat - Family: SWOT]

Another question is whether when money is available, should this be spent at this collection of data. Since the knowledge is shared openly, so why pay for data and not get it free.
Medically, a lot of data is available for free since this is collected by public funds.

Respondent [4] thinks it might help giving free data analyses at first, and downgrading it after (f.e.) a year. However when money should be spent, the school will (again) evaluate if this is worth the costs.

Respondent [5b] worries about who controls the data and who can see what.

Respondent [5a] mentions that you can make yourself more interesting for companies or universities. For example a target group might have a condition that you must exercise at least 10 hours a week to get into a more profitable group.

Respondent [5b] mentions that people want to know what happens to their data. If there are any consequences to sharing this data. Respondent [5a] believes this should be done very transparently. Because people do not want to pay more premium because they do not live healthy.

Respondent [5b] mentions that companies cannot just get the data from their employees. Because how far does the responsibility and power of a company reach to track you outside of work.

Fabrizio thinks it is unfair that ZuidZorg pays for the subscription fee, maybe even for sponsorship and also for data. He thinks he has the right to use the data of their own employees/clients.

He agrees that he should pay for data outside their own company. If he should not pay for the GameBus itself, he will be more willing to pay for the data. But paying on both fronts is problematic.

He even makes the statement that maybe Synergetics should pay to receive the data.
If the subscription goes up, and free data analytics is involved, this has a different feel for Fabrizio.

Fabrizio emphasizes that data will become (even more than now) big business

For CZ it could be very interesting to get data from other sources than the health care provider. It could be so that in the future a patient who participates in healthy behavior pays less premium. Still legal matters is problematic. However, when the patients chooses to share this data, this could be done.

Data about healthy activity, BRAVO related, is interesting.

Budget for this preventive data is difficult because it is not really hard proven that certain types of prevention really reduces the costs, due to multifactorial nature of ‘health’. Not in the way that, for example, drop prevention has reduced hip surgeries for the insurer.

Claudio thinks it is important that Synergetics has the ability to do data mining, data fusion (for example).

And they could sell it to third party such as a society of statistics who can ask for number of hours of gaming in Europe and make comparisons.

TI could also be interested to buy data. TI is now focusing on games, for TI it could be useful to detect what kind of games are popular in different regions of Italy. What kind of games do they play where? This can be used to set different prices, marketing expenditure or promotions. TI would be willing to pay for this.

Budget is currently not (much) available. However in the future this could change.
Free access to the game(Bus) is a must nowadays, to get a feeling about the game. This could also be used for the data business model.

**Code:** Strength {16-0}

**P 1:** Pieter Van Gorp - 1:1 [Corporate customers can re-use..] (1:374-1:488) (PPM Brouwers)
Codes: [B2B Market - Family: Target market] [Strength - Family: SWOT]

Corporate customers can re-use the challenges made by the individual users (link between corporate and community).

**P 2:** Luk Vervenne - 2:6 [The insurer is interested what..] (1:1623-1:1861) (PPM Brouwers)
Codes: [Strength - Family: SWOT] [Value]

The insurer is interested what the outcome is of a certain patient problem after a period of time and that tension field is important for the insurer. If health becomes cheaper by using GameBus, this is a positive point for insurers.

**P 5:** Respondent [5] - 5:5 [if there is a nurse who comes ..] (1:2129-1:2239) (PPM Brouwers)
Codes: [Strength - Family: SWOT]

if there is a nurse who comes to put on clothes at an elderly, with GameBus this need does not suddenly stop.

Codes: [Strength - Family: SWOT]

Respondent [5a] believes that if parties like ZuidZorg do not move with the flow, like e-health, they will seize to exist whatsoever. So if parties believe they cannibalize their own work using these kind of applications they should consider the consequences of keeping to the old fashion way of working.

Codes: [Strength - Family: SWOT]

Respondent [5b] thinks companies will be interested in this business model.

**P 5:** Respondent [5] - 5:15 [The important thing is that Ph..] (2:1136-2:1427) (PPM Brouwers)
Codes: [Strength - Family: SWOT]

The important thing is that Philips keeps promoting this portal, if this doesn't happen it will never survive. So if a company invests in GameBus, there should be put energy into keeping it alive. Respondent [5a] believes this is one of the most important factors, that someone stimulates the use.

**P 5:** Respondent [5] - 5:22 [Although it is nice to have th..] (2:3033-2:3090) (PPM Brouwers)
Codes: [Strength - Family: SWOT]

Although it is nice to have the very healthy as a client.

Codes: [Strength - Family: SWOT]

Respondent [5a] and Respondent [5b] applaud the possibility to assign different points to different users.

**P 6:** Fabrizio Greidanus & Marcel Hulsen - 6:8 [Since once they pay for someth..] (1:2965-1:3026) (PPM Brouwers)
Codes: [Strength - Family: SWOT]

Since once they pay for something they will continue to pay.
P 6: Fabrizio Greidanus & Marcel Hulsen - 6:9 [Optimally it will be incorpora..] (1:2875-1:2963) (PPM Brouwers)
Codes: [B2B Market - Family: Target market] [Strength - Family: SWOT]

Optimally it will be incorporated in some form of subscription, such as ZuidZorg Extra.

P 7: Floor van der Heijden - 7:4 [Floor likes this idea of spons..] (2:295-2:330) (PPM Brouwers)
Codes: [Strength - Family: SWOT]

Floor likes this idea of sponsorship

P 7: Floor van der Heijden - 7:5 [It is more approachable and co..] (2:333-2:427) (PPM Brouwers)
Codes: [Strength - Family: SWOT]

It is more approachable and concrete than the corporate customer and therefore more feasible.

P 7: Floor van der Heijden - 7:9 [Floor sees this as a chance fo..] (2:865-2:1088) (PPM Brouwers)
Codes: [Strength - Family: SWOT]

Floor sees this as a chance for GameBus, especially at specific times in the year. Besides the Introduction days, also Experience Days or festivities. Floor sees this as more promising since it reaches a bigger audience.

P 8: Lynn Rulkens - 8:3 [She likes the idea that the da..] (1:1054-1:1114) (PPM Brouwers)
Codes: [Strength - Family: SWOT]

She likes the idea that the data becomes property of the user

P 8: Lynn Rulkens - 8:8 [Lynn believes, apart from some..] (1:2446-1:2620) (PPM Brouwers)
Codes: [Strength - Family: SWOT]

Lynn believes, apart from some legal issues regarding products that handle with personal data/e-health between doctor and patient, there aren't really strict requirements.

P 9: Claudio Petrazzuolo & Filippo Saponara - 9:5 [The leverage in terms of how t..] (1:1033-1:1248) (PPM Brouwers)
Codes: [B2B Market - Family: Target market] [Strength - Family: SWOT]

The leverage in terms of how the employees can be encouraged is an important factor to whether TI will invest in GameBus. If the objective and goal is clear than they probably will consider this as an opportunity

Code: Threat {13-0}

P 1: Pieter Van Gorp - 1:4 [Furthermore Pieter wants to kn..] (1:966-1:1532) (PPM Brouwers)
Codes: [B2B Market - Family: Target market] [Licensing - Family: Revenue] [Threat - Family: SWOT]

Furthermore Pieter wants to know if they should pay Synergetics beforehand, with the risk that 70% of the users will not use the product. How can we invoice this properly, when a code is given to a client but not used. Perhaps pay in advance, but receiving this back after x-days of no activation. Pieter thinks the best option to solve this by letting these details be handled in negotiations between GameBus (Synergetics) and corporations (such as ZuidZorg) by account managers, sales employees or similar.

P 2: Luk Vervenne - 2:3 [Luk emphasizes that it is impo..] (1:1283-1:1350) (PPM Brouwers)
Codes: [Threat - Family: SWOT]

Luk emphasizes that it is important what you offer to the clients.

Codes: [Selling Data - Family: Revenue] [Threat - Family: SWOT]
Budgetary, Respondent [4] thinks there is little to no money available for data collection.

Codes: [Selling Data - Family: Revenue] [Threat - Family: SWOT]

Another question is whether when money is available, should this be spent at this collection of data. Since the knowledge is shared openly, so why pay for data and not get it free.

**P 4: Respondent [4] - 4:9 [Medically, a lot of data is av..] (1:2701-1:2789) (PPM Brouwers)**
Codes: [Selling Data - Family: Revenue] [Threat - Family: SWOT]

Medically, a lot of data is available for free since this is collected by public funds.

**P 5: Respondent [5] - 5:2 [A sense that there will be job..] (1:1140-1:1326) (PPM Brouwers)**
Codes: [Threat - Family: SWOT]

A sense that there will be jobs lost can come over healthcare providers. However Respondent [5b] thinks the demand is that big, and will only become bigger so e-health tools are essential.

Codes: [Threat - Family: SWOT]

The Angel pilot is very similar to GameBus with challenges/gamification and tracing healthy activities, however especially on physical and dietary point of view.

Codes: [Threat - Family: SWOT]

Respondent [5a] believes the difficulty is that a lot of independent parties are developing such applications of connecting apps. First you have apps that track physical movement (like Strava). Than an app that combines all physical apps (like Tapiriik) and on top of that even another app (like GameBus). The question is what applications will survive.

**P 6: Fabrizio Greidanus & Marcel Hulsen - 6:5 [Fabrizio mentions that he fore..] (1:2329-1:2495) (PPM Brouwers)**
Codes: [Threat - Family: SWOT]

Fabrizio mentions that he foresees a decline of ‘big’ companies in the healthcare and more independent contractors. So the corporate customer model will be in danger.

**P 6: Fabrizio Greidanus & Marcel Hulsen - 6:16 [Fabrizio thinks it is unfair t..] (2:1358-2:1553) (PPM Brouwers)**
Codes: [B2B Market - Family: Target market] [Licensing - Family: Revenue] [Selling Data - Family: Revenue] [Threat - Family: SWOT]

Fabrizio thinks it is unfair that ZuidZorg pays for the subscription fee, maybe even for sponsorship and álsó for data. He thinks he has the right to use the data of their own employees/clients.

**P 8: Lynn Rulkens - 8:4 [The idea now is that there are..] (1:1117-1:1345) (PPM Brouwers)**
Codes: [Threat - Family: SWOT]

The idea now is that there are many concerns about the ability of patients to manage/share their own data. Since these patients, chronic patients, are often with a low education level and the files are often full of jargon.

**P 8: Lynn Rulkens - 8:11 [A difficult point is that afte..] (2:244-2:331) (PPM Brouwers)**
Codes: [Threat - Family: SWOT]

A difficult point is that after the new fun phase is over, how to keep the users active.
P 9: Claudio Petrazzuolo & Filippo Saponara - 9:19 [Also gaining critical mass is ..] (1:3106-1:3280) (PPM Brouwers)
Codes: [Threat - Family: SWOT]

Also gaining critical mass is very important for an app such as GameBus so they should achieve a high number of users, otherwise the app and the business models will fail.

Code: Value {30-0}

P 2: Luk Vervenne - 2:4 [Home care organizations could ..] (1:1353-1:1552) (PPM Brouwers)
Codes: [Value]

Home care organizations could use GameBus to organize social care and have a client group which might need GameBus because of social exclusion because this costs the home care organizations money.

P 2: Luk Vervenne - 2:5 [Since they are triggered by in..] (1:1554-1:1621) (PPM Brouwers)
Codes: [Value]

Since they are triggered by insurers to keep an eye on cost-benefit.

P 2: Luk Vervenne - 2:6 [The insurer is interested what..] (1:1623-1:1861) (PPM Brouwers)
Codes: [Strength - Family: SWOT] [Value]

The insurer is interested what the outcome is of a certain patient problem after a period of time and that tension field is important for the insurer. If health becomes cheaper by using GameBus, this is a positive point for insurers.

P 2: Luk Vervenne - 2:7 [Other target customers are in ..] (1:1865-1:2017) (PPM Brouwers)
Codes: [B2B Market - Family: Target market] [Dutch Market - Family: Target market] [Opportunity - Family: SWOT] [Value]

Other target customers are in the field of social reintroduction. The municipalities are responsible for this kind of care, and the costs should be low.

P 3: Andrea Cuoghi - 3:16 [He thinks GameBus is ideal to ..] (1:779-1:832) (PPM Brouwers)
Codes: [Value]

He thinks GameBus is ideal to promote a new product.

P 4: Respondent [4] - 4:3 [The data from GameBus could be..] (1:404-1:480) (PPM Brouwers)
Codes: [Selling Data - Family: Revenue] [Value]

The data from GameBus could be used to answer concrete questions in research,

Codes: [Value]

The added value lies in the fact that you can do exactly what you want.

P 5: Respondent [5] - 5:8 [However, if home care are orga..] (1:2403-1:2583) (PPM Brouwers)
Codes: [B2B Market - Family: Target market] [Value]

However, if home care organizations decide to pick up such an application it is only good. It can be an addition to the care provided, since the elderly will have more to do.

Codes: [Opportunity - Family: SWOT] [Value]

HR is searching for methods to keep their employees healthy and active.
Fabrizio sees among the employees of ZuidZorg a decline of health, and ZuidZorg may pay for this group.

Fabrizio mentions also that when medical (track and trace) apps could be connected, this would be very interesting.

Marcel mentions curiosity as a factor to upgrade. Fabrizio mentions laziness: people want to do all their stuff in one place.

He thinks it is, in the future, probably very important to improve their care.

Employees of TU/e are often required to travel outside of the campus: High Tech Campus, Philips, Strijp etc. Most grab the car, since this is most convenient and they do not have a bike ready. With this sharing system it could be possible.

It could also be used as promotion in addition to a larger goal, such as the B-rider.

with the introduction week it could be a nice addition

TU/e also want to be part of Eindhoven, to let people show what is going on at the campus. The Green Strip is an example, and more and more activities in the evening. If this is the angle GameBus has, Communications Expertise Center is the place to promote the app.

If apps that facilitate this r..] (1:652-1:772) (PPM Brouwers)
If apps that facilitate this relation (such as a heartbeat monitor) are connected to GameBus this would be very useful.

P 8: Lynn Rulkens - 8:5 [Lynn indicates that it is hard..] (1:1348-1:1534) (PPM Brouwers)
Codes: [Value]

Lynn indicates that it is hard to make it transparent how healthy someone is living, on all aspects. GameBus could help (partially) with that by visually showing the (healthy) progress.

P 8: Lynn Rulkens - 8:20 [Lynn thinks people will choose..] (2:1791-2:1980) (PPM Brouwers)
Codes: [B2B Market - Family: Target market] [Value]

Lynn thinks people will choose their employer more and more based on the secondary benefits, looking at the popularity of Google. However this is more focused on the higher educated people.

P 8: Lynn Rulkens - 8:21 [A lot of people who come at th..] (2:2592-2:2850) (PPM Brouwers)
Codes: [Value]

A lot of people who come at the GP office have no real symptoms and need not much more than just the talk with the GP. This costs a lot of money for the system. Ideally this talk would be in a different setting, not with the GP but with neighbors or family.

P 8: Lynn Rulkens - 8:23 [Data about healthy activity, B..] (2:3172-2:3230) (PPM Brouwers)
Codes: [Selling Data - Family: Revenue] [Value]

Data about healthy activity, BRAVO related, is interesting.

P 8: Lynn Rulkens - 8:24 [Budget for this preventive dat..] (3:1-3:279) (PPM Brouwers)
Codes: [Selling Data - Family: Revenue] [Value]

Budget for this preventive data is difficult because it is not really hard proven that certain types of prevention really reduces the costs, due to multifactorial nature of 'health'. Not in the way that, for example, drop prevention has reduced hip surgeries for the insurer.

P 9: Claudio Petrazzuolo & Filippo Saponara - 9:1 [Claudio likes the idea to see ..] (1:566-1:747) (PPM Brouwers)
Codes: [B2B Market - Family: Target market] [Value]

Claudio likes the idea to see TI as a company with employees who can use GameBus. It can be used to improve the well-being of the employees and they can win rewards through the app.

P10: Cameo - 10:3 [The main reason for a game to ..] (1:725-1:909) (PPM Brouwers)
Codes: [Value]

The main reason for a game to connect to GameBus I think is the access to all the collected data to further personalize its own features and make it more appealing for the final user.

P10: Cameo - 10:5 [I don't know if I correctly un..] (1:1274-1:1468) (PPM Brouwers)
Codes: [Value]

I don't know if I correctly understood your question, but the social monitoring tool could add possible new social interactions among users running GameBus, even not belonging to the same team.

P11: CogGames - 11:5 [What would be your reasons to ..] (1:783-1:873) (PPM Brouwers)
Codes: [Value]

What would be your reasons to connect to GameBus? Extra revenues, visibility, added values

P11: CogGames - 11:9 [The leader-board is necessary ..] (1:2016-1:2212) (PPM Brouwers)
Codes: [Value]
The leader-board is necessary if you want to create a challenge. It has to be decided what kind of leader-boards you plan to create (e.g. single user, single family, single category, single game)

P12: Head Up Games - 12:1 [No. There is no gain in offeri..] (1:153-1:212) (PPM Brouwers)
Codes:   [Value]
No. There is no gain in offering GameBus to their customers.

P12: Head Up Games - 12:2 [At the moment there are no rea..] (1:453-1:527) (PPM Brouwers)
Codes:   [Value] [Weakness - Family: SWOT]
At the moment there are no reasons for Head Up Games to connect to GameBus.

______________________________
Code: Weakness {18-0}

P 2: Luk Vervenne - 2:12 [Luk is not convinced that givi..] (1:2774-1:2877) (PPM Brouwers)
Codes:   [Weakness - Family: SWOT]
Luk is not convinced that giving at random challenges is the right way. It should be a two-way stream.

P 3: Andrea Cuoghi - 3:9 [Commitment Andrea thinks Itali..] (1:1505-1:1602) (PPM Brouwers)
Codes:   [Italian Market - Family: Target market] [Weakness - Family: SWOT]
Commitment: Andrea thinks Italians might be scared in a way, he can't really tell if it is viable.

Codes:   [Weakness - Family: SWOT]
The data from GameBus could be used to answer concrete questions in research, to identify specific data before this question is formulated is impossible.

Codes:   [Weakness - Family: SWOT]
Respondent [4] indicates that he does not like that his question should be answered by an intervening party, such as Synergetics. The added value of this data research is in the kind of processing that is applied to discover relations in the data. Normally, this will not be a general activity of putting in queries and receiving results. The goal is to discover something. That knowledge and expertise is (maybe) not (sufficiently) available at the service provider or intermediary. So the question is how to bring the need for knowledge institution to do their own analyses, to the untouchable data that is stored only at the service provider. Respondent [4] thinks it is practically impossible to achieve valid results if you cannot edit the data itself and do your own type of analysis. Basic regression analysis and comparable analyses are manageable. But when new techniques are involved with either very complex algorithms or large numbers, the data should be available at the knowledge institution itself. This coupling between algorithms and data is essential and can not be transferred simply to a service provider. Especially for knowledge institutions and larger companies like Apple, Google etc.

Codes:   [Advertising - Family: Revenue] [Weakness - Family: SWOT]
However attracting new customers or giving discount to existing customers who are higher in a ranking might come of in a wrong way from a PR point.

Codes:   [Weakness - Family: SWOT]
Respondent [5b] mentions that reliability is also important, how to fend of cheaters.

Respondent [5b] asks if only age is a factor. She would like to see more dimensions, or have some sort of ‘handicapsystem’ like in golf. Respondent [5b] agrees that it might become harder from a challenge-design point of view.

P 6: Fabrizio Greidanus & Marcel Hulsen - 6:1 [Marcel asks about the choice f..] (1:1200-1:1373) (PPM Brouwers)

Marcel asks about the choice for iOS or Android, where the GameBus team chooses android, Fabrizio tells us that ZuidZorg will probably choose for iOS due to its simplicity.

P 6: Fabrizio Greidanus & Marcel Hulsen - 6:4 [Marcel explains his fear that ..] (1:1855-1:1914) (PPM Brouwers)

Marcel explains his fear that clients might not use GameBus,

P 7: Floor van der Heijden - 7:1 [Floor questions if a lot of pe..] (1:2248-1:2407) (PPM Brouwers)

Floor questions if a lot of people from group 3 have a smartphone, and if they have one do they use it for other things than making calls and maybe messaging.

P 7: Floor van der Heijden - 7:2 [Group 1 might be competitive a..] (1:2411-1:2561) (PPM Brouwers)

Group 1 might be competitive and pull group 3 with them in the challenges, however this is mostly between youngsters (group 1) and elderly (group 3).

P 7: Floor van der Heijden - 7:11 [If it should be ‘forced’ upon ..] (2:1250-2:1320) (PPM Brouwers)

If it should be ‘forced’ upon the employees it is more likely to fail.

P 9: Claudio Petrazzuolo & Filippo Saponara - 9:4 [Claudio has doubts about the p..] (1:960-1:1031) (PPM Brouwers)

Claudio has doubts about the potential to link the app to clients of TI.

P 9: Claudio Petrazzuolo & Filippo Saponara - 9:11 [Claudio mentions that there sh..] (1:2077-1:2157) (PPM Brouwers)

Claudio mentions that there should be a lot of users before this could be useful.

P 8: Lynn Rulkens - 8:9 [However Lynn sees more and mor..] (1:2622-1:2766) (PPM Brouwers)

However Lynn sees more and more that applications where health information is exchanged (must) comply with (CE) certifications or (NEN) norms.

P 8: Lynn Rulkens - 8:12 [Lynn agrees that getting (a lo..] (2:583-2:657) (PPM Brouwers)

Lynn agrees that getting (a lot of) users is essential in the first phase.
But also the financial stimulus was also too low for most people to start exercising, since the target market is the old and the sick and not poor students who will exercise for a few euros less premium.

**P12: Head Up Games - 12:2 [At the moment there are no rea..] (1:453-1:527) (PPM Brouwers)**

At the moment there are no reasons for Head Up Games to connect to GameBus.